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Julie M. Balot

Attorney Docket No.: **LEANP001**

First Named Inventor: **CRAIG T. HALL**

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09/482154
01/12/00

UTILITY PATENT APPLICATION TRANSMITTAL (37 CFR. § 1.53(b))
(Regular application claiming priority of a provisional)

Assistant Commissioner for Patents
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Washington, DC 20231

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Sir: This is a request for filing a patent application under 37 CFR. § 1.53(b) in the name of inventors:
CRAIG T. HALL, JEFFREY W. POTTS, DAN DERSHEM AND ANDREW J. BASS

For: **METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE THIRD PARTY LOGISTICS ENVIRONMENT VIA THE INTERNET**

Priority of U.S. Provisional Application No. **60/162,809** filed on **November 1, 1999** is claimed under 35 U.S.C. § 119(e).

Application Elements:

- ☒ 58 Pages of Specification, Claims and Abstract
- ☒ 66 Sheets of Drawings
- ☒ 2 Pages of an executed Declaration and Power of Attorney

Accompanying Application Parts:

- ☒ Assignment and Assignment Recordation Cover Sheet (recording fee of $40.00 enclosed)
- ☒ Return Receipt Postcard
- ☒ 1 Page of an executed Small Entity Statement(s)

Fee Calculation (37 CFR § 1.16)

	(Col. 1) NO. FILED	(Col. 2) NO. EXTRA	SMALL ENTITY RATE	FEE	OR	LARGE ENTITY RATE	FEE
BASIC FEE			$345	$ 345	OR	$690	$
TOTAL CLAIMS	86 -20 =	66	66 x9 =	$ 594	OR	x18=	$
INDEP CLAIMS	13 -03 =	10	10x39=	$ 390	OR	x78=	$
[ ] Multiple Dependent Claim Presented			$130 =	$	OR	$260=	$
* If the difference in Col. 1 is less than zero, enter "0" in Col. 2.			Total	$1,329.00	OR	Total	$

☒ Check No. 2393 in the amount of **$1,369.00** is enclosed.

☒ The Commissioner is authorized to charge any fees beyond the amount enclosed which may be required, or to credit any overpayment, to Deposit Account No. 50-0388 (Order No.LEANP001).

General Authorization for Petition for Extension of Time (37 CFR §1.136)

☒ Applicants hereby make and generally authorize any Petitions for Extensions of Time as may be needed for any subsequent filings. The Commissioner is also authorized to charge any extension fees under 37 CFR §1.17 as may be needed to Deposit Account No. 50-0388 (Order No.LEANP001).

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Application or Patent No. **Unassigned** Atty Docket # **LEANP001**

Filed or Issued: **HEREWITH**

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
37 CFR 1.9(f) and 1.27(c)--SMALL BUSINESS CONCERN

I hereby declare that I am
[ ] the owner of the small business concern identified below:
[X] an official empowered to act on behalf of the small business concern identified below:

NAME OF CONCERN: **GetTrans, Inc., d/b/a LeanLogistics.com**

ADDRESS: **25 West 8th Street, Suite 300, Holland, Michigan 49423-30**

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under 41(a) and (b) of Title 35, U.S. Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention entitled: **METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE THIRD PARTY LOGISTICS ENVIRONMENT VIA THE INTERNET**, by inventor(s) **Craig T. Hall, Jeffrey W. Potts, Dan Dershem and Andrew J. Bass**, described in

[X] the specification filed herewith.
[ ] Application No. _____ filed _____
[ ] patent # _____ issued _____

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).
*Note: separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

Name: _____
Address: _____
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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 1001 of Title 18 of the U.S. Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: **CRAIG T. HALL**

TITLE IN ORGANIZATION: **President and Chief Executive Officer**

SIGNATURE _____ DATE Jan 9, 2000

Express Mail Label No.

Attorney Docket No. LEANP001

PATENT APPLICATION

METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE THIRD PARTY LOGISTICS ENVIRONMENT VIA THE INTERNET

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PATENT

Attorney Docket No. LEANP001

METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE THIRD PARTY LOGISTICS ENVIRONMENT VIA THE INTERNET

RELATED APPLICATION DATA

The present application claims priority from U.S. Provisional Patent Application 60/162,809 for METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE LOGISTICS ENVIRONMENT VIA THE INTERNET filed on November 1, 1999, the entirety of which is incorporated herein by references for all purposes.

BACKGROUND OF THE INVENTION

The present invention relates to the facilitation of logistics over the Internet. More specifically, the present invention provides an online electronic marketplace in which carriers bid for freight tendered by shippers and shippers purchase the most attractive transportation services for their loads.

In 1998, U.S. businesses spent $898 billion in supply chain expenditures. Transportation expenditures accounted for 47%, or $425 billion of the supply chain costs. Globally, total costs related to supply chain logistics are estimated to be approximately $3.4 trillion. From the perspective of the consumer, supply chain logistics costs account for 5% to 50% of the total costs of a delivered product.

Transportation in the United States today is highly fragmented, with no single transportation company having any significant portion of the $425 billion market. The top

10 carriers by revenue in 1998 accounted for a combined market share of 14.5%, and the top 100 carriers had a combined market share of 22%.

The breakdown of the $425 billion transportation market by type of carrier is, approximately, $249 billion for private fleets (59% market share), $124 billion for for-hire trucking (29% market share), and $52 billion for for-hire package express services (12% market share).

For all of these market sectors, empty, non-revenue-generating miles are a significant issue. Based on statistics tracked by the American Trucking Association, for – hire carriers averaged 12.6% empty miles for the first seven months of 1999. Small truckload carriers with less than $30 million in annual revenue incurred the highest percentage empty miles averaging 18.4%. Large less-than-truckload (LTL) carriers fared the best with 6.5% empty miles for the same period. Statistics on private fleets' percentage of empty miles according to the Private Fleet Benchmark of Quality and Productivity are averaging 24%. Based on these numbers, the projected inefficiency in U.S. transportation expenditures today as a result of empty non-revenue generating miles is approximately $82 billion dollars annually.

Transportation brokers play a significant role in the truckload transportation market today, representing additional inefficiency in the supply chain. The demand for their services is due to the fragmentation of information in the industry and the associated empty miles. Transportation brokers have relationships with shippers in regional markets, as well as carriers who move equipment into and out of those regions. Brokers serve as the middlemen between shippers and carriers in matching loads and equipment in return for a typical commission of 8-10% of the cost of the load, normally charging a $50-$100 minimum. Most shippers and carriers have little alternative to paying this cost of doing business due to their limited visibility into the marketplace.

It is therefore desirable to provide a means by which shippers' loads may be connected with carrier capacity in a way which helps to eliminate the supply chain inefficiencies described above.

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SUMMARY OF THE INVENTION

According to the present invention, an online electronic marketplace is provided in which carriers bid for loads tendered by shippers, and shippers purchase the most attractive transportation services. The system described herein efficiently matches loads and capacities, lowers transaction costs, and creates value through enhanced visibility to information resulting in efficient transportation and financial transactions. According to specific embodiments, the present invention combines a neutral marketplace patterned after a stock exchange, with the electronic format of an Internet auction site to create a trading system for the logistics industry.

A wide variety of benefits are realized by the various participants in the system of the present invention. For example, using the present invention, transactions are effected quickly and easily with minimal paperwork and documentation. All users have access to the market 24 hours a day, seven days a week. A neutral forum is provided in which quality of service is differentiated for shippers and carriers. Pricing efficiency is realized in that the system relies on real-time market–driven pricing as opposed to contract pricing. Administrative costs of invoicing and payment are lowered due to the automatic payment mechanisms described. These mechanisms also ensure that carriers receive prompt payment for services rendered. The mechanism for load tendering is more efficient than traditional models. The overhead traditionally associated with finding loads or freight capacity is reduced or eliminated. The system give both shippers and carriers broader visibility thereby creating better load to carrier matches. This, in turn, results in lower pricing for shippers, and better profitability for carriers by reducing empty miles. Middleman broker costs are reduced or eliminated.

In addition to these immediate benefits of a real-time electronic marketplace, the system of the present invention also provides a number of highly marketable strategic

benefits. For example, private fleets may utilize the system to fill out otherwise marginal trailer capacity, thereby justifying private fleet operations to corporate management. Larger for-hire carriers may use data from the system as a planning tool when allocating equipment to different geographic sections of the country. Smaller for-hire carriers may use the system to compete with larger carriers.

Once shippers and carriers are registered in the system, the following functionalities are provided. Shippers may access the virtual marketplace of the present invention via an associated Internet web site or via an integrated electronic interface to enter loads for carriers to bid against. The basic information entered for each load may include the origin pickup location(s) and time, delivery destination(s), shipping characteristics (e.g., pallet exchange), driver handling requirements, equipment requirements, total miles associated with the load, and load expiration. According to a specific embodiment, the system automatically calculates mileage for all loads using an industry accepted mileage software package (e.g., PC*Miler). Shippers have the choice to limit the viewing of their loads to select carriers, or all carriers in the marketplace of the present invention.

Carriers may access the virtual marketplace of the present invention via an associated Internet web site or via an integrated electronic interface to view loads that are available to bid. Search tools allow carriers to view loads broadly or more narrowly based on geography, date constraints, and load characteristics. According to specific embodiments, carriers can view load details, but will not have visibility as to the specific shipper that entered the load. Each shipper's quality of service is tracked by the system and is visible to the carriers as they review loads available. Carriers have the ability to place bids on specific loads at any time. According to a specific embodiment, the various searching capabilities provided by the system integrate the visibility filters and setting specified by the user.

Before placing a bid on a load, carriers can view the current bids on a specific load, and whether a carrier or transportation broker submitted the bid. This feature allows the carriers to more intelligently bid on loads. Shippers also have the capability to view the current bids on their loads, and the company names of carriers or brokers who submitted the bids. The shipper also sees how many bids a carrier placed against their specific capacity, in order to better understand how long a specific capacity may be available before it is purchased by another shipper. Each carrier's quality of service is tracked by the system and is visible to the shippers as they review bids. Shippers have the ability to buy specific capacity at any time.

Carriers may bid specific units of capacity (i.e., equipment) against all loads in the system that meet their criteria. Carriers also have the ability to bid one unit of capacity to multiple loads. Carriers can either designate their bids as open bids with no expiration, or place expirations on the bid.

According to various specific embodiments, loads expire from the system when, for example, the shipper defined expiration has occurred, the specified pickup window has passed, the load is sold to a carrier, or the shipper removes the load manually from the system (e.g., the load is covered outside of the system).

According to various embodiments, bids expire from the system when, for example, the carrier defined expiration has occurred, the unit of capacity bid on the load is sold to another load, the load is awarded to another carrier, the bid is accepted by the load, or the bid is manually removed by the carrier (e.g., the capacity is filled outside the system).

According to specific embodiments, shippers may review bids and manually buy capacity, or they may specify automatic buys if a carrier placing a bid meets or beats specific price and quality of service criteria. If a shipper buys a carrier's capacity (i.e., accepts the carrier's bid), the carrier is required to make that capacity available, and the shipper is

required to make the load available. Failure on the part of either the carriers or the shippers to make their respective capacity and loads available negatively impacts each party's quality of service rating.

According to specific embodiments of the invention, carriers have the ability to proactively manage their capacity by setting up agents, which allow the system to act on behalf of the carrier. Carriers are able to enter specific units of capacity, along with desired pickup and delivery geographies and times. The agent operates within the time window the carrier specifies, and notifies the carrier when loads in the system match the agent criteria setup by the carrier. Carriers have the ability to either manually place bids or have the agent enter auto-bids on loads that match the agent criteria.

According to various embodiments, shippers and carriers using the system of the present invention agree to an electronic receivables and payables system. According to a specific embodiment, the system employs Automated Clearinghouse (ACH) technology. However, it will be understood that a wide variety of such technologies may be employed to effect this aspect of the invention. In one embodiment, the system electronically sends a weekly request for funding to shippers for payment of freight bills and system transaction fees. On the specified payment date, the shipper's account is debited and the system and the various carrier accounts are credited.

Thus, the present invention provides, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus for generating a bid for a shipper load. A plurality of units of capacity are selected. A group identifier is assigned to the plurality of units of capacity. A bid is then generated for the shipper load using the group identifier.

According to another specific embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided

for bidding on a plurality of shipper loads. According to this embodiment, a plurality of bids corresponding to the plurality of shipper loads are generated, each of the plurality of bids corresponding to a single unit of capacity.

According to yet another embodiment of the invention, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for bidding on a plurality of shipper loads. According to this embodiment, a plurality of bids corresponding to the plurality of shipper loads are generated, each of the plurality of bids corresponding to a single unit of capacity. Where one of the plurality of bids is accepted, all others of the plurality of bids are made unavailable.

According to still another specific embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, method and apparatus are provided for generating a bid for a shipper load. The bid for the shipper load is generated and designates a currently unavailable unit of capacity. The bid is also identified as a future bid. When the currently unavailable unit of capacity becomes available, the bid is updated to a current bid.

According to a specific embodiment of the invention, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for identifying shipper loads. A search process is generated according to at least one criterion specified by a carrier representative. The search process is operated without user intervention to identify at least one shipper load. A notification corresponding to the at least one shipper load is then transmitted to the carrier representative.

According to another specific embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for posting at least one unit of carrier capacity for viewing by shipper representatives. In response to receiving a plurality of capacity parameters input by a carrier representative, a listing for the at least one unit of carrier capacity is generated. The listing indicates the at

least one unit of carrier capacity is either currently available or available at some future time. The listing for the at least one unit of carrier capacity is then posted for viewing by the shipper representatives.

According to yet another specific embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for presenting information regarding a bid entered against a particular shipper load, the bid corresponding to a particular carrier capacity. According to this embodiment, the number of shipper loads against which the particular carrier capacity is currently bid is communicated.

According to still another embodiment of the invention, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for controlling visibility of the carrier capacities and the shipper loads. According to this embodiment, visibility of carrier capacities in the system is limited according to shipper identification information input by carrier representatives, and visibility of shipper loads in the system is limited according to carrier identification information input by shipper representatives.

According to a further embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for notifying a system user of system events. A list of the plurality of system events is presented to the system user. A plurality of notification options is also presented to the system user. At least one selection by the system user from the list of the system events is then received, the at least one selection corresponding to a subset of the plurality of system events. At least one other selection by the system user of at least one notification option from the plurality of notification options is also received. The system user is subsequently notified using the at least one notification option upon occurrence of any of the subset of the plurality of system events.

According to a still further embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for effecting payment from a shipper to a carrier. A shipper load corresponding to the shipper is presented on the system. A bid corresponding to the shipper load from the carrier is presented to the shipper. Acceptance of the bid from the shipper is communicated to the carrier. Delivery information from the carrier is presented to the shipper regarding delivery of the shipper load. The shipper load is then closed, thereby automatically effecting payment from the shipper to the carrier. According to a more specific embodiment, the shipper is given a window of opportunity to confirm or dispute the carrier's delivery information before payment is effected.

In another embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for maintaining a service rating for each shipper and each carrier in the system. At least one parameter for each of the shippers and carriers is tracked, the at least one parameter relating to performance of the corresponding one of the shippers and carriers in system transactions. The service rating for each of the shippers and carriers is updated based on the at least one parameter. The service rating for each of the shippers and carriers is communicated to selected users of the system.

In yet another embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for responding to bids for a shipper load corresponding to a shipper. The shipper load is posted on the system, the shipper load having an automatic acceptance price associated therewith specified by a shipper representative. The automatic acceptance price is a monetary value at and below which automatic acceptance is authorized. A bid for the shipper load is received specifying a bid price. Where the bid price is less than or equal to the automatic acceptance price, the bid is automatically accepted on behalf of the shipper.

In still another embodiment, in a system for matching carrier capacities with shipper loads via a wide area network, methods and apparatus are provided for responding to bids for a shipper load corresponding to a shipper. The shipper load is posted on the system, the shipper load having an automatic notify price associated therewith specified by a shipper representative. The automatic notify price is a monetary value at and below which automatic notification of the shipper representative is authorized. A bid for the shipper load is received specifying a bid price. Where the bid price is less than or equal to the automatic notify price, the shipper representative is automatically notified regarding the bid.

A further understanding of the nature and advantages of the present invention may be realized by reference to the remaining portions of the specification and the drawings.

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BRIEF DESCRIPTION OF THE DRAWINGS

Figs. 1a-8 are a series of screen shots showing various shipper interfaces according to specific embodiments of the present invention;

Figs. 9-17b are a series of screen shots showing various carrier interfaces according to specific embodiments of the present invention;

Figs. 18a-18c are a series of screen shots showing various administrative interfaces according to specific embodiments of the present invention;

Fig. 19 shows a diagram of a generic IP network, which is an example of one type of flow-based network in which the technique of the present invention may be implemented;

Fig. 20 illustrates the relationship of subnetworks and gateways to layered protocols;

Fig. 21 is a block diagram of a network system comprising a collection of computer networks connected to a plurality of nodes; and

Figs. 22 and 23 illustrate a computer system suitable for implementing embodiments of the present invention.

Docket No. 21268-0004

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

Shipper interaction with a specific embodiment of the system of the present invention will now be described with reference to the screen shots of Figs. 1a-8. Fig. 1a shows a login interface 100 which is presented to all users of the system, i.e., representatives of shippers or carriers, and system administrators. Upon entering his user name and password, the shipper representative is presented with a list of current messages as shown in interface 102 of Fig. 1b. As will be discussed, each system user may specify how they would like to be notified of various system events, e.g., e-mail, pager, web. If a user specifies notification by the web, he will receive all of his system generated messages in this interface. As shown, this particular shipper representative is being notified, for example, that one load has expired with no bids, and that another bid has been automatically accepted by the system on his behalf. The shipper representative is also receiving a price confirmation from a carrier for a particular load. The shipper representative may remove items from the list by selecting the corresponding "Remove" button, or send a confirmation using the "Confirm" button.

Shown across the top of the message area in interface 102 is a Shipper Menu which includes "Messages," "Enter Load," "Load Status," "Update Rate," "Edit Searches," "Profile," and "Setting," the related interfaces for each of which will be discussed in turn. In response to selecting his User Name, i.e., John Smith, the shipper representative is presented with User Profile interfaces 202-208 of Figs. 2a-2d in which changes to the shipper's user profile may be effected. That is, the shipper representative may change his password in Change Password interface 202 or specify how he would like to be notified of system events in Manage Notifications interface 206. Such events may include, for example, load entered, bid entered, bid manually accepted, bid automatically accepted, bid meets auto notify, low bid underbid, load confirmed, load rejected, delivery confirmation, load removed, load updated, load pre-expire, load expired, bid pre-expire, bid expired, rate updated, transaction

closed, etc. According to specific embodiments, the shipper representative may also specify methods of notification of specific contacts for specific types of events. Such notification may be for system users as well as parties outside the system. For example, when a load is delivered, both the shipper and the consignee contact for that load may wish to be notified. The consignee contact is not necessarily a system user, but they may be designated as a contact by the shipper with contact information (e.g., e-mail address) and notification rules as described below.

According to a specific embodiment, the user may specify notification by the web in which case he will be able to view these messages when he logs on as described above, or by selecting Messages in the menu. Alternatively, the user may specify notification by e-mail or by pager in which case the system will generate the appropriate e-mails or pages upon the occurrence of particular events. As shown in interface 206, the user may specify one or more of the available notification options. According to a more specific embodiment, the user may specify the kind of events for which he wishes to receive notification.

Thus, in response to selection of "Manage Notifications" in the User Profile menu, Manage Notifications interface 206 is presented. With this interface, the shipper representative may select an event from the "Event" pull down menu, select a notification method for the selected event from the "Notification Method" pull down menu, and designate a priority for the notifications from the "Priority" pull down menu. The events for which the shipper representative has specified notification protocols are listed in under "Current Events," any of which may be removed by selecting the associated "Remove" button.

Selection of "Manage Contact Information" in the User Profile menu results in presentation of interface 204 of Fig. 2b in which the shipper representative may enter and update his contact information. Selection of "Interface Prefs." in the User Profile menu

results in presentation of interface 208 of Fig. 2d in which the shipper representative may specify the preferred interface type for his machine.

In response to selecting "Enter Load" in the shipper menu, the shipper representative is presented with the Enter Load interface 302 of Fig. 3a in which specific load data may be entered for presentation on the system. These data may include the shipper's own load identifier in the "Shipper Load ID#" field for tracking purposes, as well as the type of freight in the "Freight Class" field. The shipper representative may also specify the type of equipment to be used to move the load in the "Equipment Service" field.

Load visibility, i.e., the portions of the system's user base to which the load data are presented, may be specified by selecting the "Asset" check box (i.e., carriers), the "Non-Asset" check box (i.e., brokers), and the "Both" check box (i.e., carriers and brokers). This provides a first high level mechanism by which a shipper can control who has an opportunity to bid on its loads. The shipper representative may also specify an estimate of the related freight service costs the carrier will incur. The shipper representative may also specify a minimum service rating for the load which limits the visibility of the load data to carriers having at least the specified rating. As will be discussed, each carrier and shipper in the system has a service rating which is determined by the system using a variety of parameters. Other such mechanisms to control the visibility of load data will be discussed below.

Using interface 302, the shipper representative may also specify an "Auto Buy Price" and/or an "Auto Notify Price." The Auto Buy Price is the price at or below which the shipper wants the system to automatically accept bids on the associated load on its behalf. The Auto Notify Price is the price at or below which the shipper wants the system to notify its representative if a bid for that price is entered for the associated load. The system notifies the representative using the medium specified in the user profile discussed above with

reference to Fig. 2c. The shipper representative may also enter a date and time at which the load expires, i.e., becomes unavailable in the system.

Once the load data are specified, pickup and delivery locations for the load may then be specified. According to a specific embodiment of the invention, multiple pickup and multiple delivery locations may be specified. As shown on the left side of interface 302, two pickup locations and one delivery location have been specified. Each locations has one or more buttons associated with it. Selection of the "x" button removes the associated location from the list. Selection of the up arrow button moves the associated location up within the pickup or delivery list. Selection of the down arrow button moves the associated location down. In this way, the shipper representative may specify the order in which pickups and deliveries are to be made. For recurring loads, previously entered information may be used to populate a new load by selecting a previously stored load from the "Recall" pull down menu. Creation of such a load will be discussed below.

In response to selection of "Add Pickup" in interface 302, interface 304 of Fig. 3b is presented in which the shipper representative may specify the details of each pickup location associated with the load. Shipper and customer order information may be input in the corresponding windows. According to a specific embodiment, the pickup location may be input using a name for a previously stored location, or a system-assigned LeanLogistics number (LL#). That is, if a shipper wants to store addresses of frequently used consignees, LeanLogistics.com will allow them to do so and will assign a unique identifier, i.e., an LL#, to that location. According to a specific embodiment, a search capability is provided which allows the shipper representative to search for a desired pickup location in the system database.

As shown, the weight of the freight to be picked up at this location may be specified as well as the window of time in which the pickup is to occur. According to a specific

embodiment, previously specified default times are automatically entered which depend upon the start and end dates selected by the shipper representative in interface 304. These default times may be overridden by selecting the "Override Default" button and using Override Window Defaults dialog box 306 of Fig. 3c. Once the pickup location data are complete, the shipper representative selects "Finished" which will result in presentation of interface 302.

In response to selection of "Add Delivery" in interface 302, interface 308 of Fig. 3d is presented in which the shipper representative may specify the details of each delivery location associated with the load. A consignee reference number and customer order numbers may be input in the corresponding windows. A consignee contact may also be specified from a menu of previously stored contacts for the shipper in the corresponding window. According to a specific embodiment, the shipper representative may search for consignee contacts using dialog box 310 of Fig. 3e.

Referring again to Fig. 3d, the delivery location may be input using a name for a previously stored location, or a system-assigned LeanLogistics number (LL#). That is, if a shipper wants to store addresses of frequently used consignees, LeanLogistics.com will allow them to do so and will assign a unique identifier, i.e., an LL#, to that location. According to a specific embodiment, a search capability is provided which allows the shipper representative to search for a desired delivery location in the system database. According to a specific embodiment, a shipper-specific consignee table in the database is searched. The shipper representative may also specify freight services for the delivery location including, for example, unloading of the freight by the driver, pallet exchange, and whether temperature control is required. Finally, the shipper representative may specify the window of time in which the delivery is to occur by entering start and end dates in the Delivery Window boxes. According to a specific embodiment dialog box 306 of Fig. 3c is

used to override previously specified time windows as discussed above. Once the delivery location data is complete, the shipper representative may add another delivery location, or select "Finished" which will result in presentation of interface 302.

Once the load information is complete including all pickup and delivery location data, the shipper representative may select "Save Load" in interface 302 in response to which the load data are saved and Load Validation interface 312 of Fig. 3f is presented. Using interface 312, the shipper representative may review the load data to ensure that they are accurate. Changes may be effected by selection of the "Change" button. The shipper representative may also cancel the load by selecting the "Cancel" button.

In addition, if the shipper representative wants to save the load for future use, he selects the "Remember?" check box and enters a name by which the load may later be recalled. That is, selection of a particular load name in the "Recall" pull down menu in interface 302 results in presentation of the previously stored load data as shown in Recall Load interface 314 of Fig. 3g. Using this interface, the shipper need only specify the pickup and delivery windows and customer orders to create a new load. Once the shipper representative selects "Save Load" in interface 312, the load data are made available to the specified users for bidding. In addition, the shipper representative is presented with Load Acceptance interface 316 of Fig. 3h in which the system informs the shipper representative that the load has been accepted by the system and communicates the system assigned load number.

In response to selecting "Load Status" in the shipper menu, the shipper representative is presented with Load Status interface 402 of Fig. 4a in which the status of the shippers loads may be viewed. According to a specific embodiment, the shipper representative may view all or some subset of the loads using the "View" pull down which allows filtering of the loads to be viewed according to various criteria. An example of useful filter would be all

loads for which the particular shipper representative is responsible. Each load has an entry for each bid in the system for that load which includes a "Buy" button, selection of which indicates acceptance of the particular bid to the carrier.

Once the shipper representative has selected the "Buy" button, the system removes the carrier's capacity from any other bids, removes all other bids for that load, and generates a notification to the shipper representative using the specified mechanism(s). As will be discussed below with reference to the carrier interfaces, the carrier is also notified of the shipper's acceptance of its bid.

As shown in interface 402, each load entry for which a bid has been entered includes the carrier's name, the amount of the bid, the type of carrier (asset based vs. non-asset based), the carrier's service rating, the number of loads against which the carrier capacity has been bid, and the number of shipper's loads on which the carrier has bid (e.g., Truck 1 is shown to have been bid against 3 loads, 2 of which are this shipper's loads). According to a specific embodiment, each entry may also include the specific units of capacity being bid against the load. All of this information allows the shipper to more intelligently select the appropriate carrier. For example, if the bid information for one carrier indicates that their capacity has been bid against 5 loads and the bid information for another carrier indicates that their capacity has been bid against only this load, the shipper may choose to deal with the less encumbered carrier. The interface includes button objects selection of which allows the shipper representative to either modify the associated load or remove the associated load from the system.

As mentioned above, it is possible that a particular unit of capacity or carrier equipment group may be bid against multiple loads. In addition and according to a specific embodiment, a business rule is enforced which states that "If a shipper accepts a carrier's bid, the carrier is obligated to take the load." Thus, according to this embodiment, when a

shipper accepts a bid corresponding to a unit of capacity which has been bid against multiple loads, the system makes the capacity, i.e., the other bids corresponding to the capacity, unavailable so that the business rule may be enforced.

According to a more specific embodiment, once the shipper has accepted a particular bid for a load, the system flags the corresponding unit of capacity as unavailable in the carrier's Unit Status interface (see interface 1208 of Fig. 12d). All other active bids corresponding to that unit of capacity as well as other bids against the load are flagged as "removed." Thus, according to this embodiment, the bids are merely flagged as unavailable rather than actually being removed from the system.

Selection of the load number, e.g., L1, in Load Status interface 402 results in presentation of Load Detail interface 404 of Fig. 4b in which details of the selected load are presented. Selection of the links in interface 402 associated with each unit of carrier capacity, e.g., Truck 1, results in presentation of dialog box 406 of Fig. 4c in which the shipper's loads against which the unit has been bid are identified. Selection of the entry in the "# Bids" columns in either of interfaces 402 and 404 results in presentation of summary Bid History interface 408 of Fig. 4d in which a summary of the information for each bid for the selected load is provided. According to a specific embodiment, summary interface 408 shows only the last active bid from each carrier.

More detailed information may be accessed by selection of the "Detail" link in response to which detailed Bid History interface 410 of Fig. 4e is presented. In interface 410, the shipper representative is provided with the name of the carrier equipment as well as the number of loads against which the particular equipment is bid. In specific embodiments, links to Unit Usage dialog boxes, e.g., dialog box 406, are provided in both of interfaces 408 and 410. According to more specific embodiments, all bids made against the load, including retracted bids, are shown. The shipper representative may respond to any of the bids in the

Bid History interfaces by selecting the "Buy" buttons. In response to selection of a "Buy" button, Buy Confirmation interface 412 of Fig. 4f is presented which confirms the capacity purchase and informs the shipper representative that the carrier has been notified.

Selection of "Update Rate" in the shipper menu results in presentation of Update Load Rate interface 502 of Fig. 5. Using this interface, a shipper representative may increase the rate associated with a load for which a bid was previously accepted by the shipper.

Shipper representatives with the appropriate authorization may select "Settings" in the shipper menu in response to which read access to the Settings interfaces 602-606 of Figs. 6a-6c is provided. Referring first to interface 602 of Fig. 6a, the authorized shipper representative may view information about the shipper by selecting "Corporate Information" in the Settings menu on the left side of the interface. As shown, this information includes the company name, address, billing contact information, the company's Dun & Bradstreet number (the use of which will be discussed below with reference to the carrier interfaces), and the EIN (i.e., the Employer ID Number which is a unique identifier assigned by the federal government).

Selection of "Banking Information" in the Settings menu results in presentation of Banking Information interface 604 of Fig. 6b in which the authorized shipper representative may view the shipper's banking information which is used to facilitate the automatic payment mechanisms supported by the system of the present invention. According to a specific embodiment, any changes by the shipper representative to the data in Corporate Information interface 602 and Banking Information interface 604 are sent to LeanLogistics for approval.

Selection of "Admin Users" in the Shipper Environment menu results in presentation of the Maintain User Accounts interface 606 of Fig. 6c in which the authorized shipper

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representative may add or delete shipper representatives and enter or modify access levels for those representatives.

According to an additional embodiment, selection of "Credit Qualification" in the menu results in presentation of an interface (not shown) in which a shipper wishing to participate in the exchange enters credit information which is then used by LeanLogistics to determine the credit worthiness of the shipper.

Shipper representatives with the appropriate authorization may select "Profile" in the shipper menu in response to which access to the Shipper Profile interfaces 702-716 of Figs. 7a-7h is provided. Referring first to interface 702 of Fig. 7a, the authorized shipper representative may enter or modify a new pickup location for use in entering loads by selecting "Manage Load-At Locations" in the Shipper Profile menu and designating either the <New Location> entry or a previously stored location in the associated menu. Selection of "Manage Consignees" presents a Consignees interface 704 of Fig. 7b for entering or modifying consignee information for use in entering loads as described above. Selection of "Manage Locations" in interface 704 results in presentation of Manage Consignee Location interface 706 of Fig. 7c in which the shipper representative may enter or modify the contact, operating, and geographical information for a particular consignee location.

Selection of "Load Defaults" in the Shipper Profile menu results in presentation of Load Defaults interface 708 of Fig. 7d in which the authorized shipper representative may specify various defaults for the load entering process described above with reference to Figs. 3a-3h. As a result of selecting various options in interface 708, Enter Load interface 302 of Fig. 3a will be partially populated with the appropriate defaults when it is first presented to the shipper representative. Thus, the shipper representative may select its preferred carrier types to include asset based (carriers), non-asset based (brokers), or both. The shipper representative may also select the default value for the minimum acceptable service rating,

as well as whether the Shipper Load ID# field in interface 302 is to be populated with a manually entered shipper's number or a number automatically generated by the system.

Selection of "Supported Equipment Services" in the Shipper Profile menu results in presentation of Supported Equipment Services interface 710 of Fig. 7e in which the authorized shipper representative may specify which types of equipment will be available to shipper representatives in the Equipment Service pull down menu in interface 302. That is, selection of the available equipment services in interface 710 results in population of the Equipment Service menu of interface 302 with the selected equipment.

Selection of "Supported Freight Services" in the Shipper Profile menu results in presentation of Supported Freight Services interface 712 of Fig. 7f in which the authorized shipper representative may specify which freight service options will be available to shipper representatives in the Enter Load, Add Pickup Location, and Add Delivery Location interfaces Figs. 3a, 3b, and 3d. That is, selection of the available freight services in interface 712 results in the selected service options being presented in interfaces 302, 304, and 308.

Selection of "Supported Freight Classes" in the Shipper Profile menu results in presentation of Supported Freight Classes" interface 714 of Fig. 7g in which the authorized shipper representative may specify which types of freight classes, e.g., dry, will be available to shipper representatives in the Freight Class pull down menu in interface 302. That is, selection of the available equipment services in interface 714 results in population of the Freight Class menu of interface 302 with the selected freight classes.

Selection of "Included/Excluded Carriers" in the Shipper Profile menu results in presentation of Included/Excluded Carriers interface 716 of Fig. 7h in which the authorized shipper representative may specify to which carriers its loads will be made available for bidding. The shipper representative designates whether the list of carriers are to be included or excluded, then creates the list of carriers by entering their Standard Carrier Alpha Code

(SCAC) in the corresponding window, and adding the SCAC to the list by selection of the right arrow. The carrier's SCAC is then displayed in the list.

Finally, the shipper representative may effect searches in the system for their own loads by selecting "Edit Searches" in the shipper menu which results in presentation of Edit Searches interface 802 of Fig. 8. Using this interface, the shipper representative may define and save searches which may then be repeatedly used by the shipper representative to identify appropriate loads according to the specified criteria. For example, the shipper representative may specify a zip code of origin, an operator (e.g., $\geq$, $\leq$, or =), and/or a value (e.g., zip code, price, miles, etc.). According to a specific embodiment, one or more additional rows of these fields specifying other parameters (e.g., destination zip code) may be added and logically combined with the previous row(s) using the logical operators "And" and "Or."

In addition to allowing standard comparison of bid and load characteristics and according to a specific embodiment, the system links to a Geographic Information System (GIS) which facilitates searching using spatial relations such as, for example, a distance radius from a specific location. Each physical location within the system database for shippers and consignees are geocoded upon entry in the database to associate a latitude and longitude coordinate for that location. This information is then used to provide the spatial comparison of data. When the search is fully specified the shipper representative names the search and selects "Save" in response to which the search is saved and enabled. A list of the available saved searches is provided in the "Choose Search" window.

Carrier interaction with a specific embodiment of the system of the present invention will now be described with reference to the screen shots of Figs. 9-17b. Upon logging into the system using interface 100 of Fig. 1a, the carrier representative is presented with a Messages interface 902 of Fig. 9 which is similar to interface 102 of Fig. 1b, and in which

access to system generated messages specific to the carrier representative is provided. As in the case of the shipper representative, a carrier menu is provided across the top of each the carrier interfaces. The carrier representative may select his name, i.e., the User Name in response to which the User Profile interfaces described above with reference to Figs. 2a-2d are presented. As described above, the carrier representative may use these interfaces to change his password, manage contact information and the method(s) by which he would like to be notified of specific system events, and specify interface preferences. System events for which the carrier representative may select notification include, for example, bid entered, bid manually accepted, bid automatically accepted, agent matched loads, low bid underbid, load confirmed, load rejected, delivery confirmation, load removed, bid removed, bid updated, load pre-expire, load expired, bid pre-expire, bid expired, rate updated, unit updated, and transaction closed.

The carrier representative may search for loads in the system which are of interest to the carrier. For example, the carrier representative may search for loads relating to the lanes of operation in which the carrier is operating, within certain weight ranges, or that require specific equipment. According to a specific embodiment, load searching may be effected by selecting "Load Search" in the main carrier menu or in the Options menu in response to which Load Search interface 1002 of Fig.10 is provided in which the carrier representative may define load searches. According to the embodiment shown in Fig. 10, the carrier representative may specify, for example, the origin or destination of the load, the pickup and delivery windows, and specific equipment and freight services. Alternatively, the carrier representative may select and/or modify one of a plurality of available predefined searches in the "Choose Search" pull down menu. For example, such a predefined search might designate a particular zip code in which the load originates, i.e., the initial pickup location for the load, and/or a specified radial distance from the pickup location.

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Upon selection of "View Loads" in the carrier menu, the View Loads interface 1102 of Fig. 11a is presented which provides detailed information for loads corresponding to the currently active search criteria specified by the carrier representative. A "Bid" button or hyperlink is associated with each load entry in response to selection of which the carrier representative may begin the bid generation process with the Enter Bids interface 1104 of Fig. 11b.

As shown, the carrier representative may specify the price, the time and date at which the bid expires, the carrier's equipment being bid, and whether the load is being bid as current or future capacity. A bid which is designated as a current bid is presented to the shipper as currently available capacity. A bid which is designated by the carrier as a future bid is made with a unit of capacity which is currently reserved for some other load. Such bids are presented to shippers as capacity which will be available at some future date and time. When the reserved capacity is made available to the system by the carrier closing the current load, the system automatically updates the future bid to a current bid and makes the bid available to the shipper as currently available capacity. This allows the carrier to plan the use of specific units of capacity one or more steps in advance.

Referring back to interface 1102, election of an entry in the "# Bids" column results in presentation of Bid History window 1106 of Fig. 11c which provides information regarding each of the bids for the associated load. According to a specific embodiment and as shown in the figure, this information includes the date and time the bid was made, the type of carrier (i.e., asset vs. non-asset), the carrier rating, and the amount of the bid, as well as an indication of whether the current user's company has bid on this load.

Advanced Unit Assignment window 1108 of Fig. 11d is presented in response to selection of "Advanced" in interface 1104 of Fig. 11b. This interface allows the carrier representative to assign specific equipment, e.g., trucks, to current and future load plans.

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When the carrier representative submits a bid for one of the listed loads, Bid Acceptance window 1110 of Fig. 11e is presented which confirms receipt of the bid by the system and allows the carrier representative to review the details of the bid before it is posted.

When a shipper accepts the carrier's bid, the appropriate carrier representative is notified in the specified manner(s) and the carrier representative must then communicate acceptance of the load by selecting "Confirm Loads" in the carrier menu in response to which Confirm Loads interface 1202 of Fig. 12a is displayed. According to a specific embodiment, the carrier is obligated to accept the load once the shipper has accepted the bid. If the carrier rejects the load various penalties may be exacted including, for example, payment of money damages and, as will be discussed in greater detail below, a negative impact on the carrier's service rating.

Selection of the load number in interface 1202 results in presentation of Load Detail interface 1204 of Fig. 12b in which detailed information for the associated load is provided. Selection of the unit number, e.g., Truck 1, in interface 1202 results in presentation of Unit Status window 1206 of Fig. 12c in which the status of the particular unit of capacity is detailed. According to a specific embodiment and as shown, window 1206 identifies the loads against which the unit of capacity is currently bid. "Move" buttons are provided which may be used to move the capacity from one bid to another or to remove the capacity from the associated bid.

Selection of "Units" in the Options portion of the carrier menu results in presentation of Unit Status interface 1208 of Fig. 12d. In a specific embodiment, interface 1208 shows each unit of capacity associated with the carrier representative, the status of each unit of capacity (e.g., whether the unit has been bid, is inactive, or has won a load), and an identifier for the loads against which a unit has been bid (e.g., L-1, L-4, L-10) or which a unit has won

(e.g., L-103). According to a specific embodiment, the carrier representative may post any or all of its anticipated units of capacity on the system for access by shippers. This provides visibility of available truck capacity in particular regions of the country so that shippers can plan in anticipation of spikes in business demand, or simply forward purchase carrier capacity.

The carrier representative may view information regarding the carrier's current bids in the system by selecting "View Bids" in the carrier menu in response to which View Current Bids interface 1302 of Fig. 13 is presented. Using this interface, the carrier representative may remove an active bid from the system. He may also edit certain information which is not "intrinsic" to the bid. For example, the expiration date may be edited, but not the amount of the bid.

Selection of "Confirm Delivery" in the carrier menu results in presentation of Confirmed Loads interface 1402 of Fig. 14a which, in turn, provides access to interfaces 1404 and 1406 by which the carrier representative may communicate confirmation information to the system regarding pickups and deliveries. In response to selection of a particular load number in interface 1402, Pickup/Delivery Performance interface 1404 of Fig. 14b is presented. For a specific pickup or delivery location the carrier representative enters the actual date and time of the pickup or delivery. Selection of the "Exceptions" link associated with each location results in presentation of an Exceptions interface 1406 of Fig. 14c in which other load related information may be specified such as, for example, the reasons for a late arrival, whether or not there was any damage to the load and who was responsible, whether the quantity delivered or picked up was over or under the contracted quantity, and the number of hours the carrier was detained at the specified location. The information input by the carrier representative is used by the system to maintain the service rating for the carrier.

According to a specific embodiment, confirmation of a delivery triggers the automatic payment feature of the present invention, e.g., an electronic funds transfer (EFT) from the shipper to the carrier is effected. According to another embodiment, the shipper and/or the addressee of the load are notified as to the information entered in this interface for verification purposes. The recipients of this information are then afforded a period of time during which any disputes regarding the accuracy of the confirmation information are dealt with. In addition, once a load has been delivered and closed, the system "unlocks" the corresponding unit(s) of carrier capacity, making it available once again for bidding.

Selection of "Agents" in the Options portion of the carrier menu results in the presentation of Carrier Agent Maintenance interface 1502 of Fig. 15. Using this interface, the carrier representative can create "agents" which search the system on an ongoing basis without user interaction for loads which satisfy specified criteria. The criteria with which a particular agent looks for loads are selected from among the predefined searches in the "Choose Search" pull down menu (the manner in which such predefined searches are created is discussed above with reference to Fig. 10). Thus, for example, an agent could be configured using a predefined search which looks for loads originating within 100 miles of Chicago with delivery within 100 miles of Atlanta. Pickup and delivery dates and times may also be specified, as well as the types of equipment and freight services specified by the shipper.

The carrier representative may also specify dates and times between which the agent will operate. Alternatively, the carrier representative may specify a manual control for starting and stopping the agent. Interface 1502 also provides a Current Agent List in which details about each of the carrier representative's searches are displayed. As shown, each agent entry may also include a "Stop" button with which the carrier representative may terminate operation of the agent at any time.

According to a specific embodiment, the carrier representative may also specify how they would like any loads matching the agent criteria to be handled. For example, the carrier representative may specify that he wants to be notified of any matching loads so that he may manually enter a bid. This may be done, for example, via an e-mail which contains a hyperlink to the load, thus facilitating entering of the bid. Alternatively, the carrier representative may specify that the system should generate a bid automatically when a matching load is found. According to a specific embodiment, the system employs a rating engine to calculate the most appropriate bid, taking into consideration the distances, freight services, and bidding rules set forth by the carrier. Such bidding rules might specify, for example, a rate per mile, a shipper rating, an equipment service class, freight services, bid expiration date and times, and origin and destination zip codes as well as distance radii from specific locations.

Selection of "Profile" in the carrier menu by an authorized carrier representative results in presentation of Carrier Profile interfaces 1602-1616 of Figs. 16a-16h in which the carrier representative may modify the carrier profile in many of the same ways as discussed above with reference to the Shipper Profile interfaces. For example, selection of "Manage Contacts" in the Carrier Profile menu results in presentation of Manage Contacts interface 1602 of Fig. 16a in which the authorized carrier representative may enter and modify contact information.

Selection of "Carrier Equipment ID's" in the Carrier Profile menu results in presentation of Carrier Equipment ID's interface 1604 of Fig. 16b in which the authorized carrier representative may add or remove the carrier's own identifiers for specific equipment and units of capacity such as, for example, truck identifiers as shown. The carrier representative may also group individual units of capacity together and create group identifiers, e.g., Group A, for the purpose of being able to bid multiple units of capacity

against a single load as shown in interface 1606 of Fig. 16c. An equipment group is simply a grouping of units understood by the carrier. The equipment and group identifiers are then available to the carrier representative for the purpose of, for example, creating a bid as described above.

Selection of "Supported Equipment Services" in the Carrier Profile menu results in presentation of interface 1608 of Fig. 16d in which the authorized carrier representative may select from a list of equipment services provided by the system to create a list of equipment services supported by the carrier. Similarly, selection of "Supported Freight Services" results in presentation of interface 1610 of Fig. 16e in which the authorized carrier representative may create a list of freight services (including a value where appropriate) supported by the carrier. The supported equipment and freight services are used by the carrier to create a standard accessorial charges table. Selection of "Supported Freight Classes" results in presentation of interface 1612 of Fig. 16f in which the carrier representative may create a list of freight classes supported by the carrier.

Selection of "Included/Excluded Shippers" in the Carrier Profile Options menu results in presentation of interface 1614 of Fig. 16g in which the authorized carrier representative may specify the shippers with which the carrier is willing to do business. According to a specific embodiment, shippers are identified by their Dun & Bradstreet identification numbers. Similarly, selection of "Preferred Shipper Types" brings up interface 1616 of Fig. 16h in which the carrier representative may specify whether the carrier is willing to do business directly with shippers, through transportation brokers, or both. Interfaces 1614 and 1616 essentially allow the specification of filters (as described above with reference to shipper interface 130) which allow or prevent access to the carrier's units of capacity in the system.

Selection of "Settings" in the carrier menu by an authorized carrier representative results in presentation of the Settings menu shown, for example, in interface 1702 of Fig. 17a. Selection of "Corporate Information," "Banking Information," or "Admin Users" in the Settings menu results in interfaces similar to those described above with reference to Figs. 6a-6c in which the authorized carrier representative can view information regarding the carrier, the carrier's bank account(s), and administer the various carrier representatives who have access to the system. Selection of "Operating Authority Information" by an authorized user leads to an interface 1702 (Fig. 17a) in which the carrier's operating authority information may be entered and modified. Selection of "Insurance Information" by an authorized user leads to an interface 1704 (Fig. 17b) in which the carrier's insurance information may be entered and modified.

According to various embodiments of the present invention, a service rating is maintained for each shipper and carrier which provides a visible and objective measure of the quality of service provided by each. According to a specific embodiment, the service rating is a numeric rating from 1 to 5 with 5 being the highest rating. Each new carrier and shipper in the system start with an average rating of 3. The system employs a variety of metrics to adjust the service ratings. For example, for carriers, such metrics may include on-time pickup and delivery, damage to cargo, rejection of loads, the number of shipper complaints relative to the aggregate number of loads handled by the carrier, misrepresentation of equipment or services (e.g., use of an out-of-spec trailer), etc. According to a specific embodiment, a carrier's service rating is automatically updated upon closing of a load.

The service rating for shippers may be determined from a variety of metrics including, for example, carrier complaints (e.g., carrier detention at either pickup or delivery

locations), reneging on accepted bids, payment issues, misrepresentation (e.g., no unload at delivery location), hidden charges (e.g., shipper's customer charges to unload), etc.

Figs. 18a-18d are a series of screen shots showing various administrative interfaces. By selection of each of the entries in the menu, a corresponding interface is provided in which the various lists provided by the system to the shippers and carriers are maintained. Manage SCAC Listings interface 1802 of Fig. 18a allows an authorized system representative to manage the SCAC listings in the system. Manage Equipment Services interface 1804 of Fig. 18b allows the system representative to add and remove items from the list of available equipment services. Manage Type Codes interface 1806 of Fig. 18c allows the system representative to add or remove items from the lists of available freight services and classes.

The following is a general description of networking technology, portions of which are relevant to various embodiments of the present invention. A computer network is a geographically distributed collection of interconnected communication links for transporting data between nodes, such as computers. By definition, a network is a group of computers and associated devices that are connected by communications facilities or links. Network connections can be of a permanent nature, such as via cables, or can be of a temporary nature, such as connections made through telephone or other communication links. A plurality of computer networks may be further interconnected by intermediate nodes, or routers, to extend the effective "size" of the networks, smaller portions of which may be maintained as autonomous domains of nodes. A router is computer system that stores and forwards data packets from one local area network (LAN) or wide area network (WAN) to another. Routers see the network as network addresses and all the possible paths between them. They read the network address in a transmitted message and can make a decision on how to send it based on the most expedient route (traffic load, line costs, speed, bad lines,

etc.). Routers typically communicate by exchanging discrete "packets" of data according to predefined protocols. In this context, a protocol comprises a set of rules defining how the nodes interact with each other.

Networks vary in size, from a local area network (LAN) consisting of a few computers and related devices, to a wide area network (WAN) which interconnects computers and LANs that are geographically dispersed. An internetwork, in turn, is the joining of multiple computer networks, both similar and dissimilar, by means of gateways or routers that facilitate data transfer and conversion from various networks. A well known abbreviation for internetwork is internet. As currently understood, the capitalized term Internet refers to the collection of networks and gateways that uses a Transmission Control Protocol/Internet Protocol (TCP/IP). The Internet has recently seen explosive growth by virtue of its ability to link computers located throughout the world.

Fig. 19 shows a diagram of an IP network, which is an example of one type of flow-based network in which the technique of the present invention may be implemented. A flow can be a hard-state virtual circuit in an ATM network, a soft-state flow in an IP network (e.g., a MPLS tunnel), or a stateless connection as a TCP/IP connection in today's Internet. As shown in Fig. 19, the IP network 1902 includes the Internet (or a WAN) 1904 over which a Node 1916 (e.g. a computer) can communicate with a separate node 1906 via a plurality of intermediate nodes (e.g. R1, R3, R4). Node 1906 may be, for example, a server which is part of Local Area Network (LAN) 1907, connected to the Internet via routers R1 and R3. Router R3 (1910) may, in turn, connect one or more other routers (e.g., router R2) with the Internet.

A LAN is a communication network that serves users within a confined geographical area. It is made up of servers, workstations, a network operating system and a communications link. Servers are high-speed machines that hold programs and data shared

by all network users. The workstations, or clients, are the users' personal computers, which perform stand-alone processing and access the network servers as required The controlling software in a LAN is the network operating system, such as, for example, NetWare, UNIX, and/or Appletalk, which resides in the server. Message transfer is managed by a transport protocol such as, for example, IPX, SPX, SNA and/or TCP/IP. The physical transmission of data is performed by the access method (Ethernet, Token Ring, etc.) which is implemented in the network adapters that plug into the machines. The actual communications path is the cable (twisted pair, coax, optical fiber) that interconnects each network adapter.

In order to reduce design complexity, most networks are organized as a series of hardware and software levels or "layers" within each node. These layers interact to format data for transfer between, e.g., a source node and a destination node communicating over the network. Specifically, predetermined services are performed on the data as it passes through each layer and the layers communicate with each other by means of the predefined protocols. This layered design permits each layer to offer selected services to other layers using a standardized interface that shields those layers from the details of actual implementation of the services. The layered protocols, commonly referred to as protocol stacks, are described in greater detail with reference to Fig. 20.

Fig. 20 illustrates the relationship of subnetworks and gateways to layered protocols. Assume that the user application 2002A in host A sends an application protocol data unit (PDU) to an application layer protocol 2002B in host B, such as, for example, a file transfer system. The file transfer software performs a variety of functions and sends file records to the user data. In many systems, the operations at host B are known as *server* operations and the operations at host A are know as *client* operations.

As indicated by the downward arrows in the protocol stack at host A, this unit is passed to the transport layer protocol 2004A, which performs a variety of operations and

adds a header to the PDU passed to it. At this point, the unit of data is often referred to as a *segment*. The PDU from the upper layers is considered to be data to the transport layer.

Next, the transport layer passes the segment to the network layer 2006A, also called the IP *layer*, which again performs specific services and appends a header. This unit (now called a *datagram* in internet terms) is passed down to the lower layers. Here, the data link layer adds its header as well as a trailer, and the data unit (now called a *frame*) is launched into subnetwork 2010 by the physical layer 2008A. Of course, if host B sends data to host A, the process is reversed and the direction of the arrows is changed.

Internet protocols are typically unaware of what goes on inside the network. The network manager is free to manipulate and manage the PDU in any manner necessary. In some instances, however, the internet PDU (data and headers) remains unchanged as it is transmitted through the subnet. In Fig. 20, it emerges at the gateway where it is processed through the lower layers 2014 and passed to the IP (network) layer 2012. Here, routing decisions are made based on the destination address provided by the host computer.

After these routing decisions have been made, the PDU is passed to the communications link connected to the appropriate subnetwork (comprising the lower layers). The PDU is re-encapsulated into the data link layer frame and passed to the next subnetwork 2016, where it finally arrives at the destination host.

The destination (host B) receives the traffic through its lower layers and reverses the process that transpired at host A; it de-encapsulates the headers by stripping them off in the appropriate layer. The header is used by the layer to determine the actions it is to perform; the header therefore governs the layer's operations.

The PDU created by the file transfer application in the application service layer is passed to the file transfer application residing at host B. If host A and B are large mainframe computers, this application is likely an exact duplicate of the software at the transmitting

host. The application might, however, perform a variety of functions, depending on the header it receives. It is conceivable that the data could be passed to another end-user application at host B, but in many instances the user at host A merely wants to obtain the services of a server protocol, such as a file transfer or email. If this is the case, it is not necessary for an end-user application process to be invoked at host B.

To return the retrieved data from the server at host B to the client at host A, the process is reversed. The data is transferred down through the layers in the host B machine, through the network, through the gateway, to the next network, and up the layers of host A to the end-user.

Fig. 21 is a block diagram of a network system 2100 comprising a collection of computer networks connected to a plurality of nodes. The nodes are typically general-purpose computers comprising a source node S, an end node N, a destination node D and a plurality of intermediate nodes or routers R1 and R2. Each node typically comprises a central processing unit (CPU) 2102, a memory unit 2104 and at least one network adapter 2106 interconnected by a system bus 2110. The memory unit 2104 may comprise storage locations typically composed of random access memory (RAM) devices, which are addressable by the CPU 2102 and network adapter 2106. The memory unit typically provides temporary storage of information, such as, for example, executable processes and contents of data packets, as described further herein. An operating system, portions of which are typically resident in memory and executed by CPU, functionally organizes the node by, inter alia, invoking network operations in support of those processes executing in the CPU.

The computer networks included within system 2100 may range from local area networks (LANs) to wide area networks (WANs). A LAN is a limited area network, while a WAN may be a public or private telecommunications facility that interconnects nodes widely dispersed using communication links. Communication among the nodes coupled to

these networks is typically effected by exchanging discrete data "packets" specifying addresses of, e.g., source and destination nodes. Since the system shown in Fig. 21 comprises a relatively small group of interconnected LANs 1-3, it is typically maintained as an autonomous domain. The intermediate nodes, typically routers, are configured to facilitate the flow of data packets throughout the domain 2100 by routing those packets to the proper receiving nodes.

In general, when a source node S transmits a packet over LAN 1, the packet is sent to all nodes on that LAN. If the intended recipient of the packet is connected to LAN 3, the packet is routed through router R1, over LAN 2 and through R2 onto LAN 3. A key function of a router is determining the next node to which the packet is sent; this routing function is typically performed by network layer 2160 of a protocol stack 2150 within each node. Typically, the packet includes two destination addresses: the address of the final destination node and the address of the next node along the route. The final destination address remains constant as the packet traverses the networks along an optimal route, while the next destination address changes as the packet moves from node to node along the optimal route through the networks.

Specifically, when source node S sends a packet to destination node D, i.e., the final destination address, the packet is transmitted onto LAN 1 with a next destination address specifying the address of router R1. Address information embedded in the packet, which is processed by the higher-layer software of the protocol stack 2150, identifies the final destination of the packet as node D. Based on this information, R1 determines that the next node along the optimal path is router R2 and proceeds to pass the packet onto LAN 2 for reception by that node. Router R2 then determines that the next node is the final destination node D and transmits the packet over LAN 3 to node D.

Figs. 22 and 23 illustrate a computer system 2200 suitable for implementing embodiments of the present invention. Fig. 22 shows one possible physical form of the computer system. Of course, the computer system may have many physical forms ranging from an integrated circuit, a printed circuit board and a small handheld device up to a huge super computer. Computer system 2200 includes a monitor 2202, a display 2204, a housing 2206, a disk drive 2208, a keyboard 2210 and a mouse 2212. Disk 2214 is a computer-readable medium used to transfer data to and from computer system 2200.

Fig. 23 is an example of a block diagram for computer system 2200. Attached to system bus 2220 are a wide variety of subsystems. Processor(s) 2222 (also referred to as central processing units, or CPUs) are coupled to storage devices including memory 2224. Memory 2224 includes random access memory (RAM) and read-only memory (ROM). As is well known in the art, ROM acts to transfer data and instructions uni-directionally to the CPU and RAM is used typically to transfer data and instructions in a bi-directional manner. Both of these types of memories may include any suitable of the computer-readable media described below. A fixed disk 2226 is also coupled bi-directionally to CPU 2222; it provides additional data storage capacity and may also include any of the computer-readable media described below. Fixed disk 2226 may be used to store programs, data and the like and is typically a secondary storage medium (such as a hard disk) that is slower than primary storage. It will be appreciated that the information retained within fixed disk 2226, may, in appropriate cases, be incorporated in standard fashion as virtual memory in memory 2224. Removable disk 2214 may take the form of any of the computer-readable media described below.

CPU 2222 is also coupled to a variety of input/output devices such as display 2204, keyboard 2210, mouse 2212 and speakers 2230. In general, an input/output device may be any of: video displays, track balls, mice, keyboards, microphones, touch-sensitive displays,

transducer card readers, magnetic or paper tape readers, tablets, styluses, voice or handwriting recognizers, biometrics readers, or other computers. CPU 2222 optionally may be coupled to another computer or telecommunications network using network interface 2240. With such a network interface, it is contemplated that the CPU might receive information from the network, or might output information to the network in the course of performing the above-described method steps. Furthermore, method embodiments of the present invention may execute solely upon CPU 2222 or may execute over a network such as the Internet in conjunction with a remote CPU that shares a portion of the processing.

In addition, embodiments of the present invention further relate to computer storage products with a computer-readable medium that have computer code thereon for performing various computer-implemented operations. The media and computer code may be those specially designed and constructed for the purposes of the present invention, or they may be of the kind well known and available to those having skill in the computer software arts. Examples of computer-readable media include, but are not limited to: magnetic media such as hard disks, floppy disks, and magnetic tape; optical media such as CD-ROMs and holographic devices; magneto-optical media such as floptical disks; and hardware devices that are specially configured to store and execute program code, such as application-specific integrated circuits (ASICs), programmable logic devices (PLDs) and ROM and RAM devices. Examples of computer code include machine code, such as produced by a compiler, and files containing higher level code that are executed by a computer using an interpreter.

While the invention has been particularly shown and described with reference to specific embodiments thereof, it will be understood by those skilled in the art that changes in the form and details of the disclosed embodiments may be made without departing from the spirit or scope of the invention. For example, embodiments of the present application have been described with reference to the trucking industry. However, it will be understood that

the techniques described herein are equally applicable to other sectors of the supply chain, e.g., aircraft, shipping, rail. Therefore, the scope of the invention should be determined with reference to the appended claims.

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WHAT IS CLAIMED IS:

1. In a system for matching carrier capacities with shipper loads via a wide area network, a method for generating a bid for a shipper load, comprising:

selecting a plurality of units of capacity;

assigning a group identifier to the plurality of units of capacity; and

generating a bid for the shipper load using the group identifier.

2. The method of claim 1 wherein the units of capacity correspond to equipment identifiers defined by a carrier representative.

3. The method of claim 2 wherein the equipment identifiers correspond to at least one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

4. The method of claim 1 wherein generating a bid comprises generating a plurality of bid entries, each of the bid entries corresponding to one of the units of capacity.

5. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 1.

6. In a system for matching carrier capacities with shipper loads via a wide area network, a method for bidding on a plurality of shipper loads, comprising generating a plurality of bids corresponding to the plurality of shipper loads, each of the plurality of bids corresponding to a same unit of capacity.

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7. The method of claim 6 wherein the same unit of capacity corresponds to an equipment identifier defined by a carrier representative.

8. The method of claim 7 wherein the equipment identifier corresponds to at least one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

9. The method of claim 6 further comprising, in response to acceptance by a shipper representative of one of the plurality of bids, making all others of the plurality of bids unavailable.

10. The method of claim 6 wherein the same unit of capacity comprises a group comprising a plurality of units of capacity.

11. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 6.

12. In a system for matching carrier capacities with shipper loads via a wide area network, a method for bidding on a plurality of shipper loads, comprising:

generating a plurality of bids corresponding to the plurality of shipper loads, each of the plurality of bids corresponding to a same unit of capacity; and

where one of the plurality of bids is accepted, making all others of the plurality of bids unavailable.

13. The method of claim 12 wherein the same unit of capacity corresponds to an equipment identifier defined by a carrier representative.

14. The method of claim 13 wherein the equipment identifier corresponds to one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

15. The method of claim 12 wherein the same unit of capacity comprises a group comprising a plurality of units of capacity.

16. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 12.

17. In a system for matching carrier capacities with shipper loads via a wide area network, a method for generating a bid for a shipper load, comprising:

generating the bid for the shipper load designating a currently unavailable unit of capacity, the bid being identified as a future bid; and

when the currently unavailable unit of capacity becomes available, updating the bid to a current bid.

18. The method of claim 17 wherein the currently unavailable unit of capacity corresponds to an equipment identifier defined by a carrier representative.

19. The method of claim 18 wherein the equipment identifier corresponds to one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

20. The method of claim 17 wherein the currently unavailable unit of capacity comprises a group comprising a plurality of units of capacity.

21. The method of claim 17 further comprising:

generating additional bids for other shipper loads designating the currently unavailable unit of capacity, the additional bids being identified as additional future bids; and

when the currently unavailable unit of capacity becomes available, updating the additional bids to a additional current bids.

22. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 17.

23. In a system for matching carrier capacities with shipper loads via a wide area network, a method for identifying shipper loads, comprising:

generating a search process according to at least one criterion specified by a carrier representative;

operating the search process without user intervention to identify at least one shipper load; and

transmitting a notification corresponding to the at least one shipper load to the carrier representative.

24. The method of claim 23 wherein the at least one criterion comprises at least one of pickup location, delivery location, pickup date, delivery date, equipment types, and freight services.

25. The method of claim 23 wherein transmitting the notification comprises at least one of transmitting an e-mail, transmitting a pager signal, and transmitting a message to be displayed using a system interface.

26. The method of claim 25 wherein the e-mail includes a hyperlink corresponding to the at least one shipper load.

27. The method of claim 23 wherein operating the search process comprises operating the search process within a window of time specified by the carrier representative.

28. The method of claim 23 wherein operation of the search process is activated manually.

29. The method of claim 23 wherein operation of the search process is terminated manually.

30. The method of claim 23 further comprising automatically generating a bid for the at least one shipper load on behalf of the carrier representative.

31. The method of claim 30 wherein automatically generating the bid comprises generating the bid in accordance with bidding rules specified by the carrier representative.

32. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 23.

33. In a system for matching carrier capacities with shipper loads via a wide area network, a method for posting at least one unit of capacity for viewing by shipper representatives, the method comprising:

in response to receiving a plurality of capacity parameters input by a carrier representative, generating a listing for the at least one unit of capacity, wherein the listing indicates the at least one unit of capacity is one of currently available and available at some future time; and

posting the listing for the at least one unit of capacity for viewing by the shipper representatives.

34. The method of claim 33 wherein the at least one unit of capacity corresponds to an equipment identifier defined by the carrier representative.

35. The method of claim 34 wherein the equipment identifier corresponds to one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

36. The method of claim 33 wherein the at least one unit of capacity comprises a group comprising a plurality of units of capacity.

37. The method of claim 33 wherein the plurality of capacity parameters includes at least one of a price information, expiration information, and equipment information.

38. The method of claim 33 wherein posting the listing comprises making the listing available to a subset of a plurality of system users as determined from information specified by the carrier representative.

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39. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 33.

40. In a system for matching carrier capacities with shipper loads via a wide area network, a method for presenting information regarding a bid entered against a particular shipper load, the bid corresponding to a particular carrier capacity, the method comprising communicating a number of shipper loads against which the particular carrier capacity is currently bid.

41. The method of claim 40 wherein the particular unit of capacity corresponds to an equipment identifier defined by the carrier representative.

42. The method of claim 41 wherein the equipment identifier corresponds to one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

43. The method of claim 40 wherein the particular unit of capacity comprises a group comprising a plurality of units of capacity.

44. The method of claim 40 wherein the information includes a hyperlink, the method further comprising presenting a bid history relating to the particular shipper load in response to selection of the hyperlink.

45. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 40.

46. In a system for matching carrier capacities with shipper loads via a wide area network, a method for controlling visibility of the carrier capacities and the shipper loads, comprising:

limiting visibility of carrier capacities in the system according to shipper identification information input by carrier representatives; and

limiting visibility of shipper loads in the system according to carrier identification information input by shipper representatives.

47. The method of claim 46 wherein the carrier capacities correspond to equipment identifiers defined by the carrier representative.

48. The method of claim 47 wherein the equipment identifiers correspond to at least one of trucking capacity, aircraft capacity, shipping capacity, and rail capacity.

49. The method of claim 46 wherein selected ones of the carrier capacities comprise groups comprising pluralities of units of capacity.

50. The method of claim 46 wherein the shipper identification information comprises a Dun & Bradstreet company identifier.

51. The method of claim 46 wherein the carrier identification information comprises a Standard Carrier Alpha Code (SCAC).

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52. The method of claim 46 further comprising generating a list of the shipper identification information for each carrier capacity according to the input from the carrier representatives.

53. The method of claim 52 wherein each list includes a designation associated with each item of the shipper identification information, the designation indicating whether an associated shipper may view the associated carrier capacity.

54. The method of claim 46 further comprising generating a list of the carrier identification information for each shipper load according to the input from the shipper representatives.

55. The method of claim 54 wherein each list includes a designation associated with each item of the carrier identification information, the designation indicating whether an associated carrier may view the associated shipper load.

56. The method of claim 46 further comprising limiting visibility of carrier capacities and shipper loads in the system according to system user information input which identifies a corresponding system user as one of an asset based and a non-asset based system user.

57. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 46.

58. In a system for matching carrier capacities with shipper loads via a wide area network, a method for notifying a system user of system events, comprising:

presenting a list of the plurality of system events to the system user;

presenting a plurality of notification options to the system user;

receiving at least one selection by the system user from the list of the system events, the at least one selection corresponding to a subset of the plurality of system events;

receiving at least one other selection by the system user of at least one notification option from the plurality of notification options; and

notifying the system user using the at least one notification option upon occurrence of any of the subset of the plurality of system events.

59. The method of claim 58 wherein the system user comprises a carrier representative.

60. The method of claim 59 wherein the list of system events includes at least one of load entered, load confirmed, load rejected, delivery confirmation, load removed, load updated, load pre-expire, load expired, rate updated, bid entered, bid manually accepted, bid automatically accepted, bid meets auto notify, agent matched loads, low bid underbid, bid removed, bid updated, bid pre-expire, bid expired, unit updated, and transaction closed.

61. The method of claim 58 wherein the system user comprises a shipper representative.

62. The method of claim 58 wherein the plurality of notification options includes at least one of transmitting an e-mail, transmitting a pager signal, and transmitting a message to be displayed using a system interface.

63. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 58.

64. In a system for matching carrier capacities with shipper loads via a wide area network, a method for effecting payment from a shipper to a carrier, comprising:

presenting delivery information from the carrier to the shipper regarding delivery of a shipper load; and

closing the shipper load in response to the delivery information, thereby automatically effecting payment of the carrier by the shipper.

65. The method of claim 64 further comprising providing a window of opportunity to the shipper in which the shipper may dispute the delivery information before payment of the carrier is effected.

66. The method of claim 64 wherein automatically effecting payment comprises effecting an electronic funds transfer from the shipper to the carrier using account information previously input into the system by representatives of the shipper and the carrier.

67. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 65.

68. In a system for matching carrier capacities with shipper loads via a wide area network, a method for maintaining a service rating for each shipper and each carrier in the system, comprising:

tracking at least one parameter for each of the shippers and carriers, the at least one parameter relating to performance of the corresponding one of the shippers and carriers in system transactions;

updating the service rating for each of the shippers and carriers based on the at least one parameter; and

communicating the service rating for each of the shippers and carriers to selected users of the system.

69. The method of claim 68 wherein the at least one parameter for carriers includes at least one of timeliness of pickup, timeliness of delivery, damage to cargo, rejection of loads, shipper complaints relative to an aggregate number of loads handled by the carrier, misrepresentation of equipment, and misrepresentation of services.

70. The method of claim 68 wherein the at least one parameter for shippers includes at least one of carrier complaints, reneging on accepted bids, payment issues, misrepresentation, and hidden charges.

71. The method of claim 68 wherein the service rating for each carrier is updated upon closing of a load corresponding to the carrier.

72. The method of claim 68 wherein the service rating for each shipper is updated upon closing of a load corresponding to the shipper.

73. The method of claim 68 wherein communicating the service rating for each carrier comprises including the service rating in bids presented on the system which correspond to the carrier.

74. The method of claim 68 wherein communicating the service rating for each shipper comprises presenting the service rating in loads presented on the system which correspond to the shipper.

75. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 68.

76. In a system for matching carrier capacities with shipper loads via a wide area network, a method for responding to bids for a shipper load corresponding to a shipper, comprising:

posting the shipper load on the system, the shipper load having an automatic acceptance price associated therewith specified by a shipper representative, the automatic acceptance price being a monetary value at and below which automatic acceptance is authorized;

receiving a bid for the shipper load specifying a bid price; and

where the bid price is less than or equal to the automatic acceptance price, automatically accepting the bid on behalf of the shipper.

77. The method of claim 76 wherein posting the shipper load comprises making the shipper load available to a subset of a plurality of system users as determined from information specified by the shipper representative.

78. The method of claim 76 further comprising notifying the shipper representative regarding acceptance of the bid.

79. The method of claim 78 wherein notifying the shipper representative comprises at least one of transmitting an e-mail to the shipper representative, transmitting a pager signal to the shipper representative, and transmitting a message to be displayed using a system interface to the shipper representative.

80. The method of claim 76 wherein the shipper load also has an automatic notify price associated therewith, the automatic notify price being a monetary value at and below which automatic notification of the shipper representative is authorized, the method further comprising automatically notifying the shipper representative regarding the bid where the bid price is less than or equal to the automatic notify price.

81. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 76.

82. In a system for matching carrier capacities with shipper loads via a wide area network, a method for responding to bids for a shipper load corresponding to a shipper, comprising:

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posting the shipper load on the system, the shipper load having an automatic notify price associated therewith specified by a shipper representative, the automatic notify price being a monetary value at and below which automatic notification of the shipper representative is authorized;

receiving a bid for the shipper load specifying a bid price; and

where the bid price is less than or equal to the automatic notify price, automatically notifying the shipper representative regarding the bid.

83. The method of claim 82 wherein posting the shipper load comprises making the shipper load available to a subset of a plurality of system users as determined from information specified by the shipper representative.

84. The method of claim 82 wherein notifying the shipper representative comprises at least one of transmitting an e-mail to the shipper representative, transmitting a pager signal to the shipper representative, and transmitting a message to be displayed using a system interface to the shipper representative.

85. The method of claim 82 wherein the shipper load also has an automatic acceptance price associated therewith, the automatic acceptance price being a monetary value at and below which automatic acceptance is authorized, the method further comprising automatically accepting the bid on behalf of the shipper where the bid price is less than or equal to the automatic acceptance price.

86. A computer program product comprising a computer readable medium having computer program instructions embedded therein for performing the method of claim 82.

METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE THIRD PARTY LOGISTICS ENVIRONMENT VIA THE INTERNET

ABSTRACT OF THE DISCLOSURE

An online electronic marketplace in which carriers bid for loads tendered by shippers, and shippers purchase the most attractive transportation services. The system described herein efficiently matches loads and capacities, lowers transaction costs, and creates value through enhanced visibility to information resulting in efficient transportation and financial transactions. According to specific embodiments, the present invention combines a neutral marketplace patterned after a stock exchange, with the electronic format of an Internet auction site to create a trading system for the logistics industry.

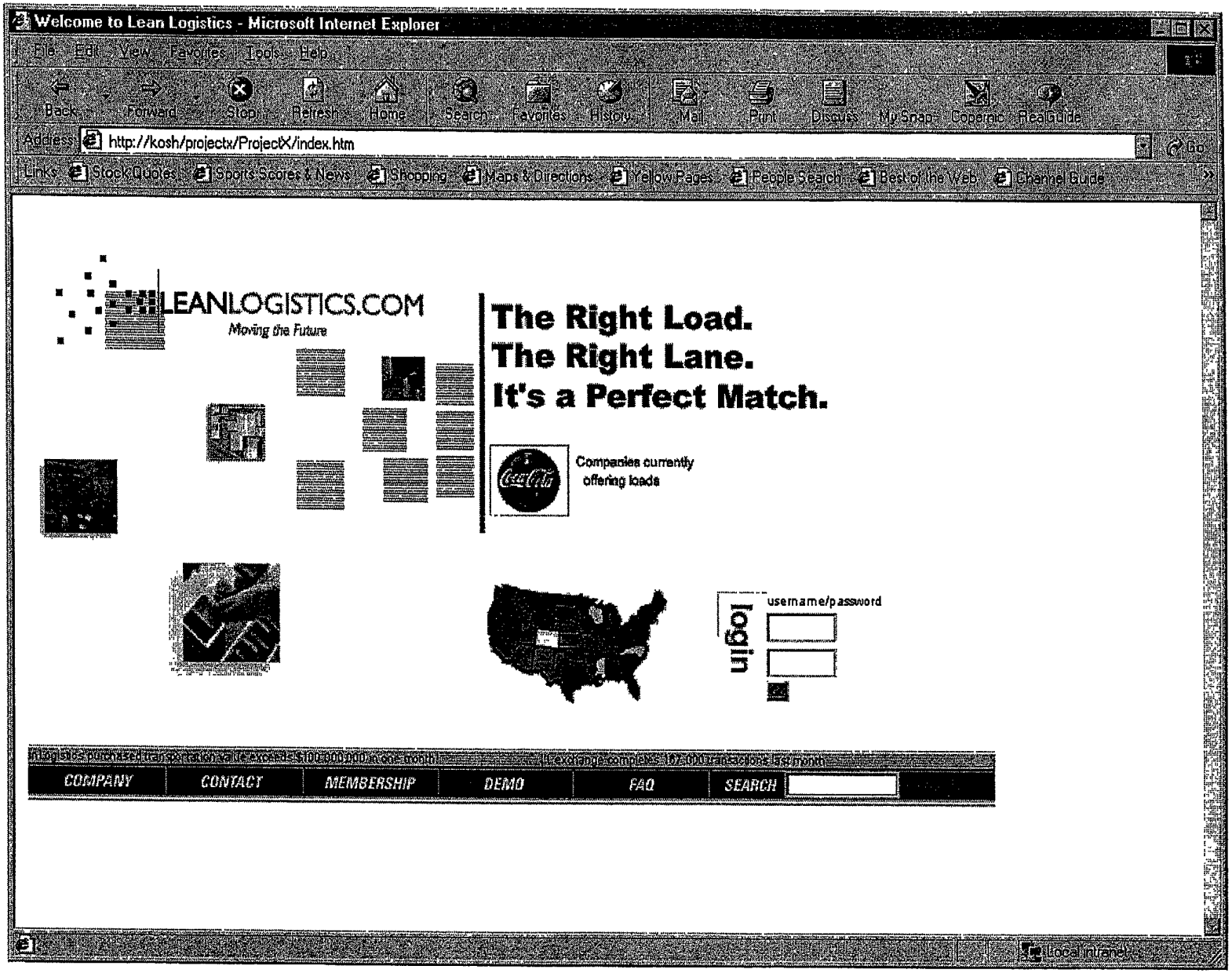


Fig. 1a (100)

09482154 .011200

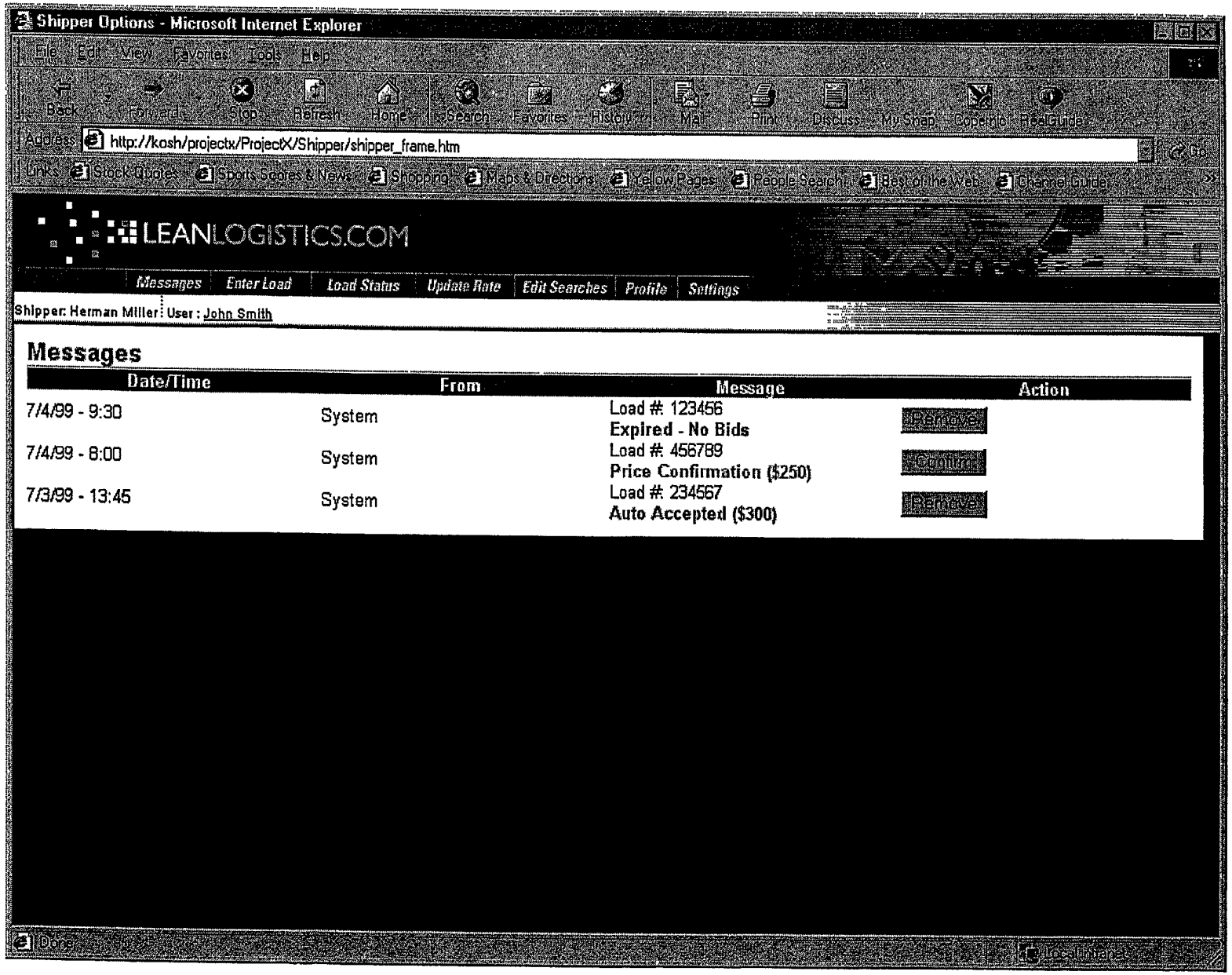

Shipper Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss My Snap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Messages
Date/Time From Message Action
7/4/99 - 9:30 System Load #: 123456 Expired - No Bids Remove
7/4/99 - 8:00 System Load #: 456789 Price Confirmation ($250) Confirm
7/3/99 - 13:45 System Load #: 234567 Auto Accepted ($300) Remove
Done

Fig. 1b (102)

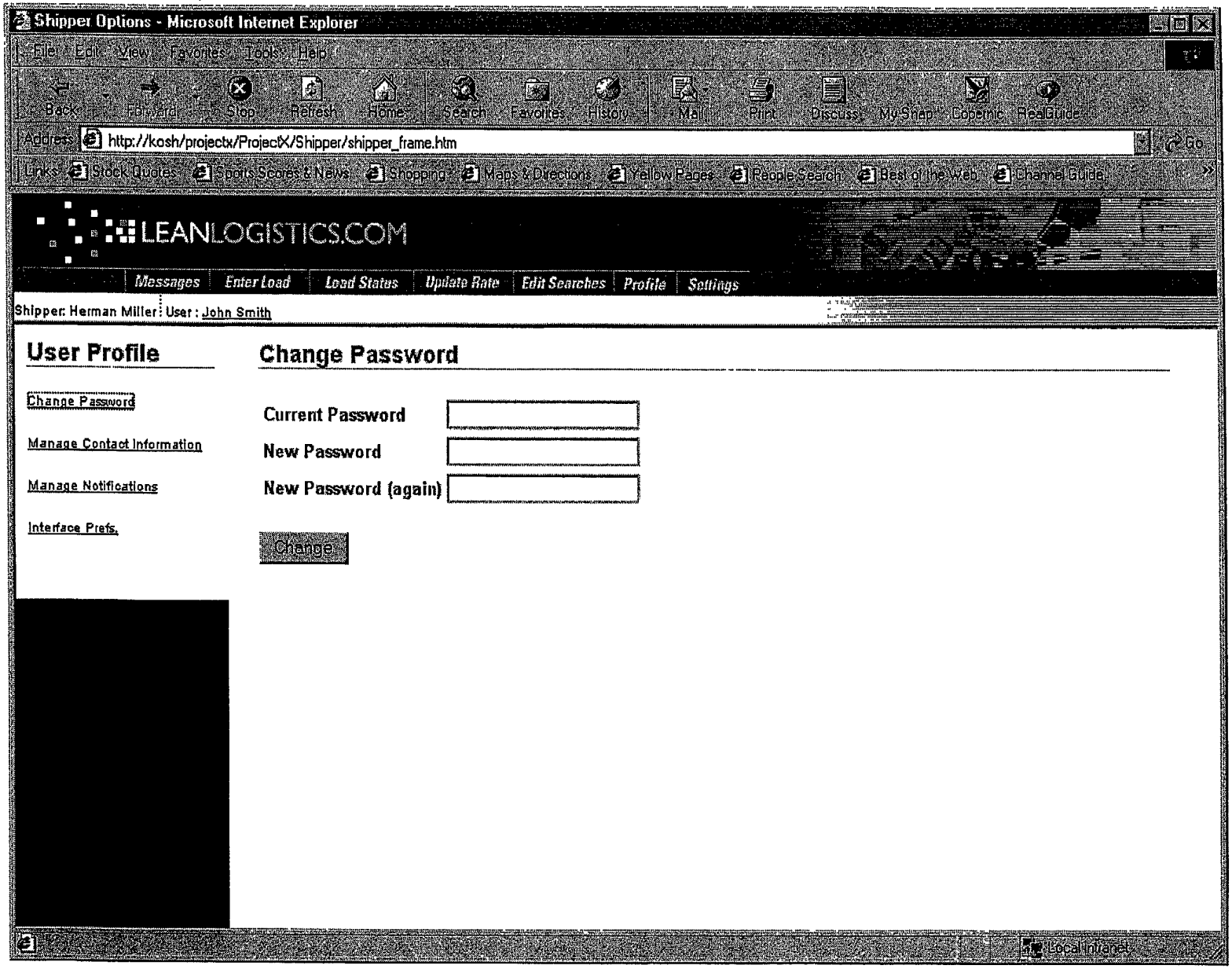

Shipper Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss My Snap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
User Profile
Change Password
Manage Contact Information
Manage Notifications
Interface Prefs.
Change Password
Current Password
New Password
New Password (again)
Change
Local intranet

Fig. 2a (202)

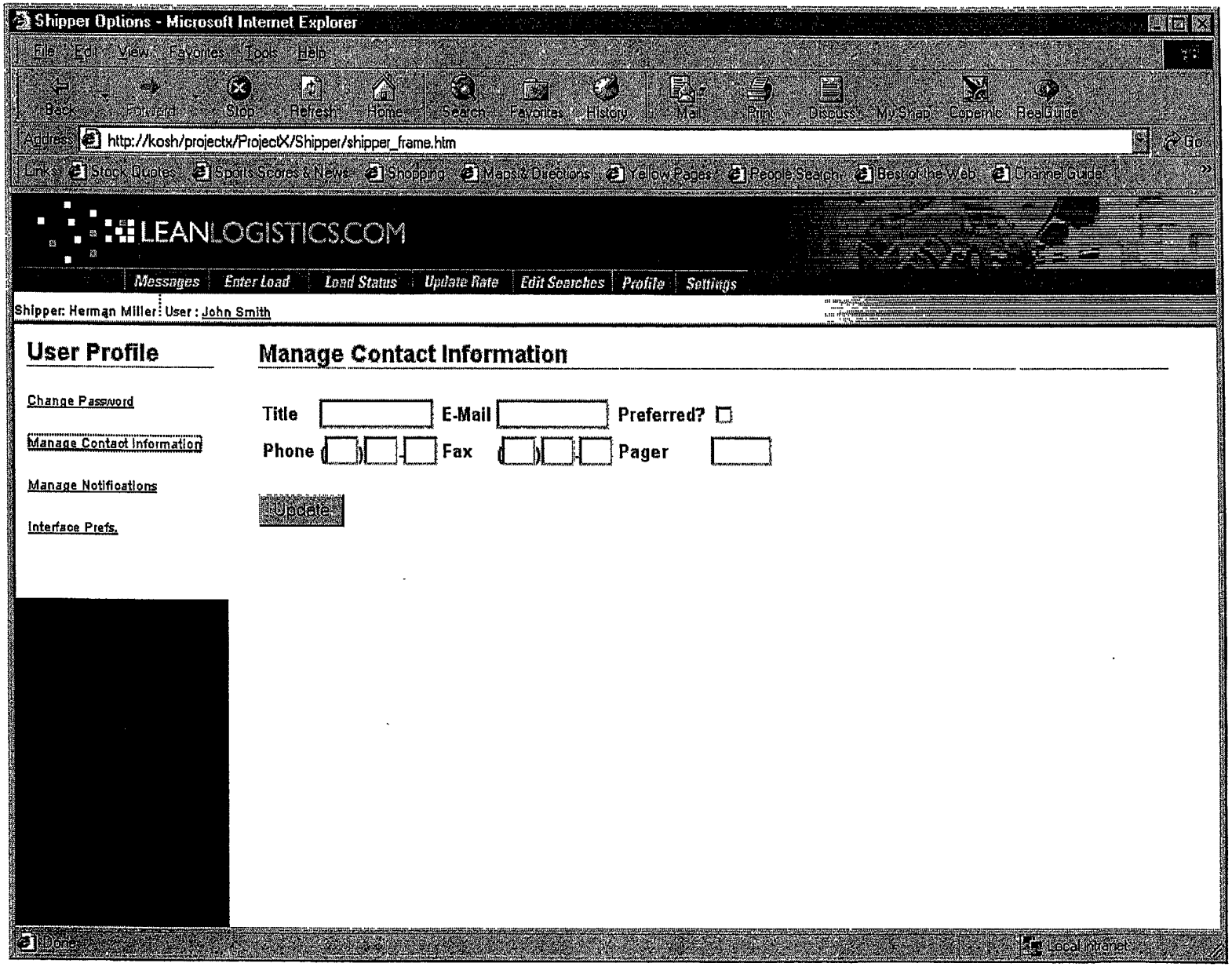

Shipper Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss MyShop Copernic RealGuide
Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
Go
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
User Profile
Change Password
Manage Contact Information
Manage Notifications
Interface Prefs.
Manage Contact Information
Title
E-Mail
Preferred?
Phone
Fax
Pager
Update
Done
Local intranet

Fig. 2b (204)

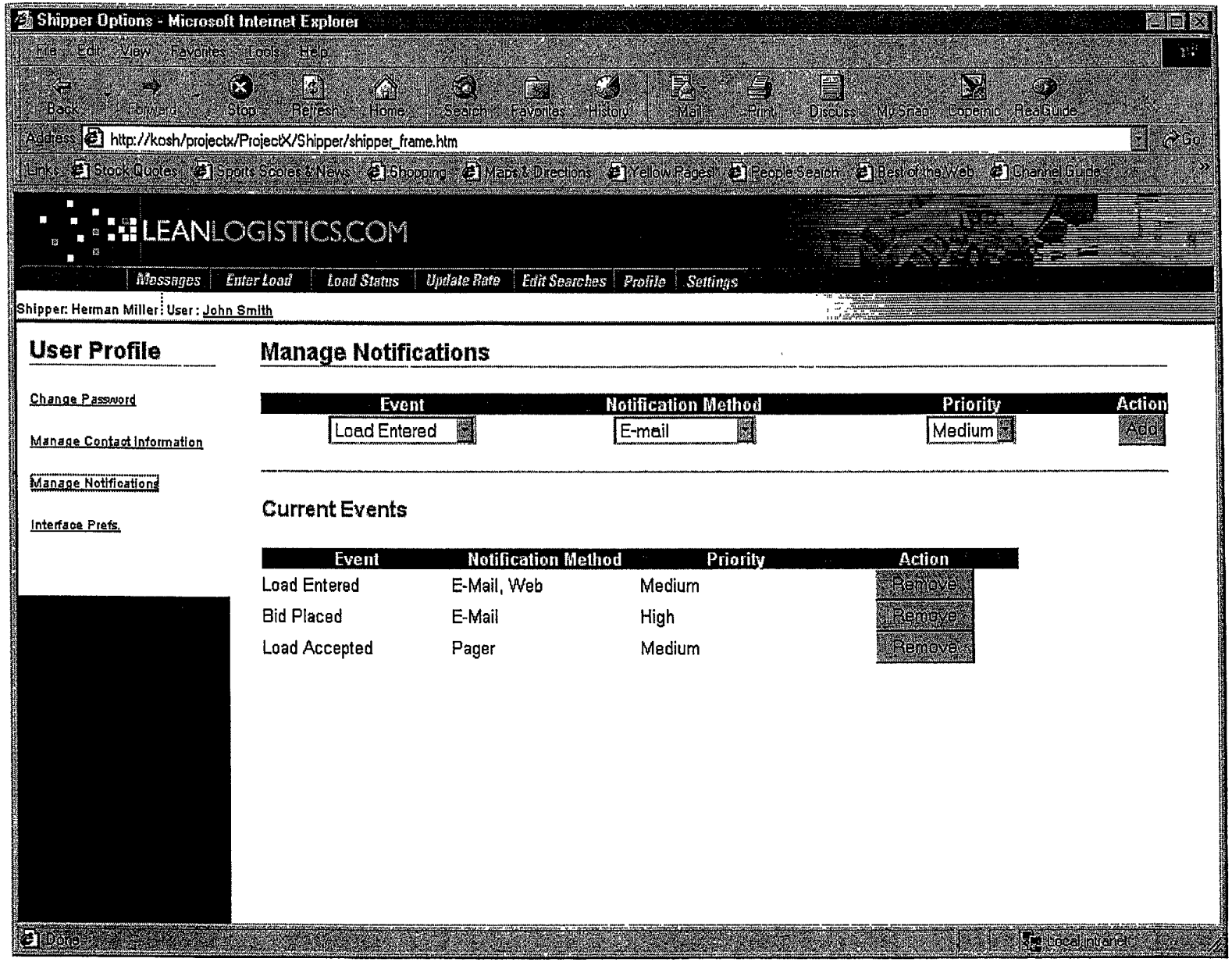

Shipper Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss My Snap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
User Profile
Change Password
Manage Contact Information
Manage Notifications
Interface Prefs.
Manage Notifications
Event Notification Method Priority Action
Load Entered E-mail Medium Add
Current Events
Event Notification Method Priority Action
Load Entered E-Mail, Web Medium Remove
Bid Placed E-Mail High Remove
Load Accepted Pager Medium Remove
Done
Local intranet

Fig. 2c (206)

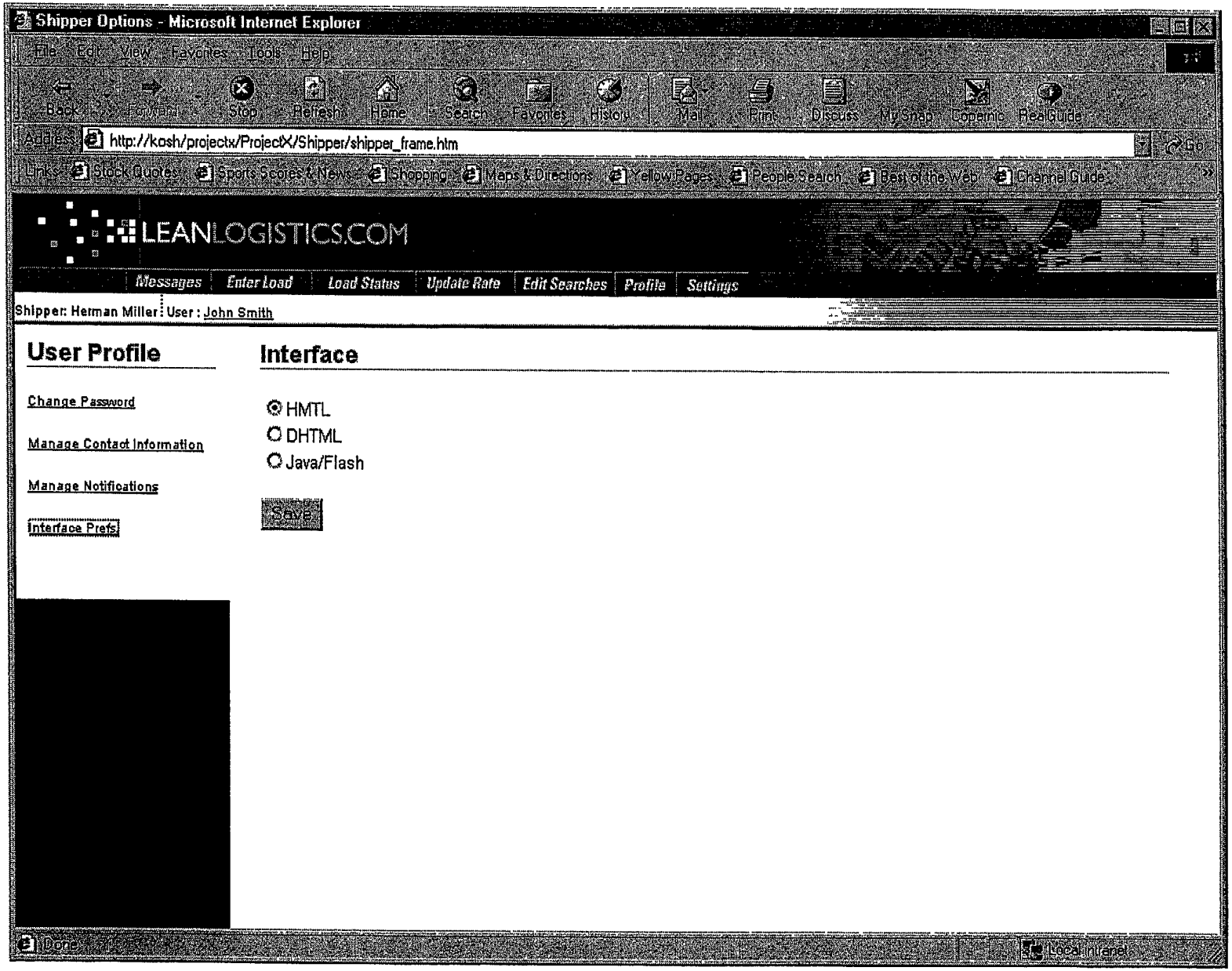

Shipper Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss My Snap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
User Profile
Change Password
Manage Contact Information
Manage Notifications
Interface Prefs
Interface
HMTL
DHTML
Java/Flash
Save
Done
Local intranet

Fig. 2d (208)

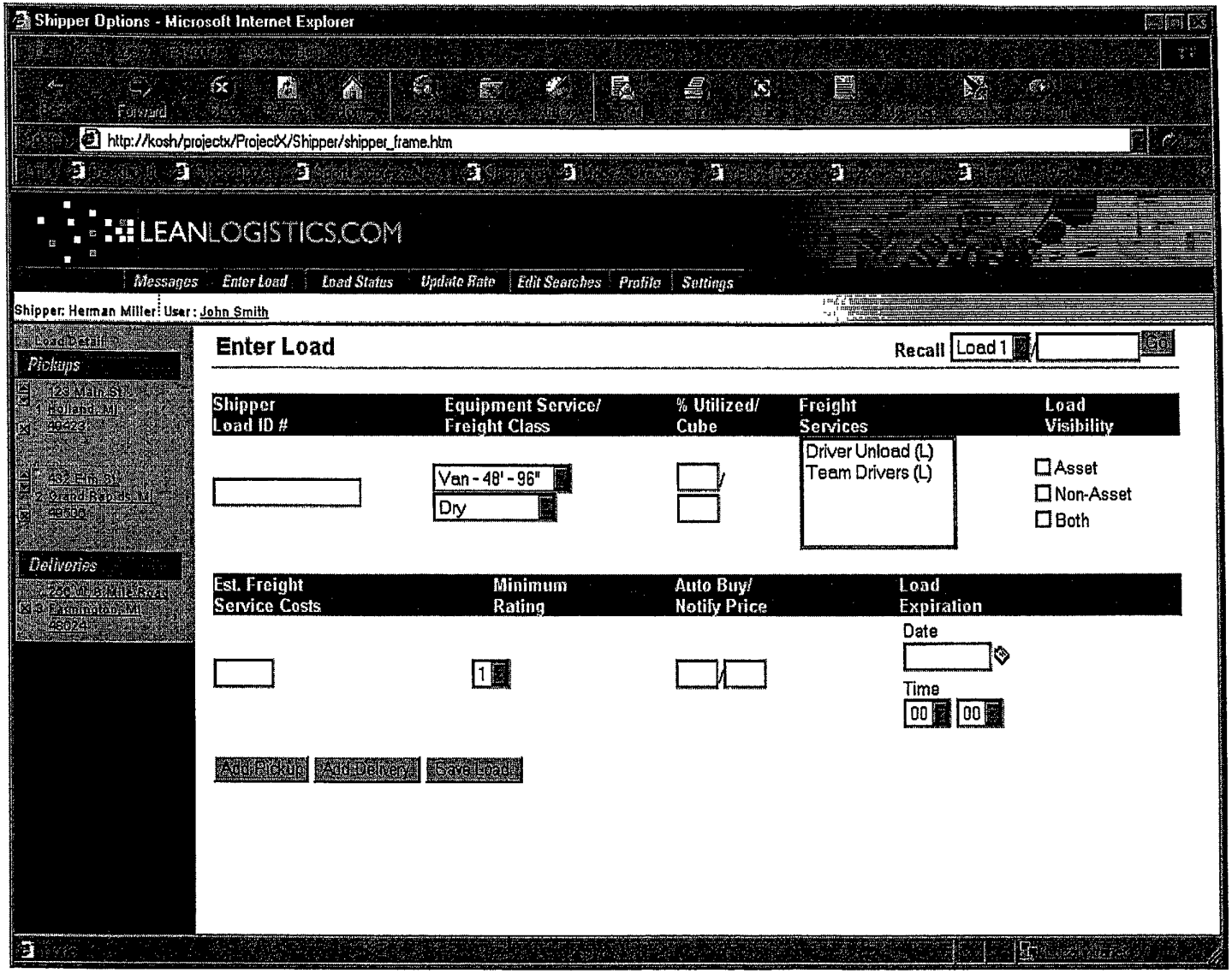

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User: John Smith
Pickups
Deliveries
Enter Load
Recall
Load 1
Go
Shipper Load ID #
Equipment Service/ Freight Class
Van - 48' - 96"
Dry
% Utilized/ Cube
Freight Services
Driver Unload (L)
Team Drivers (L)
Load Visibility
Asset
Non-Asset
Both
Est. Freight Service Costs
Minimum Rating
Auto Buy/ Notify Price
Load Expiration
Date
Time
00
00
Add Pickup
Add Delivery
Save Load

Fig. 3a (302)

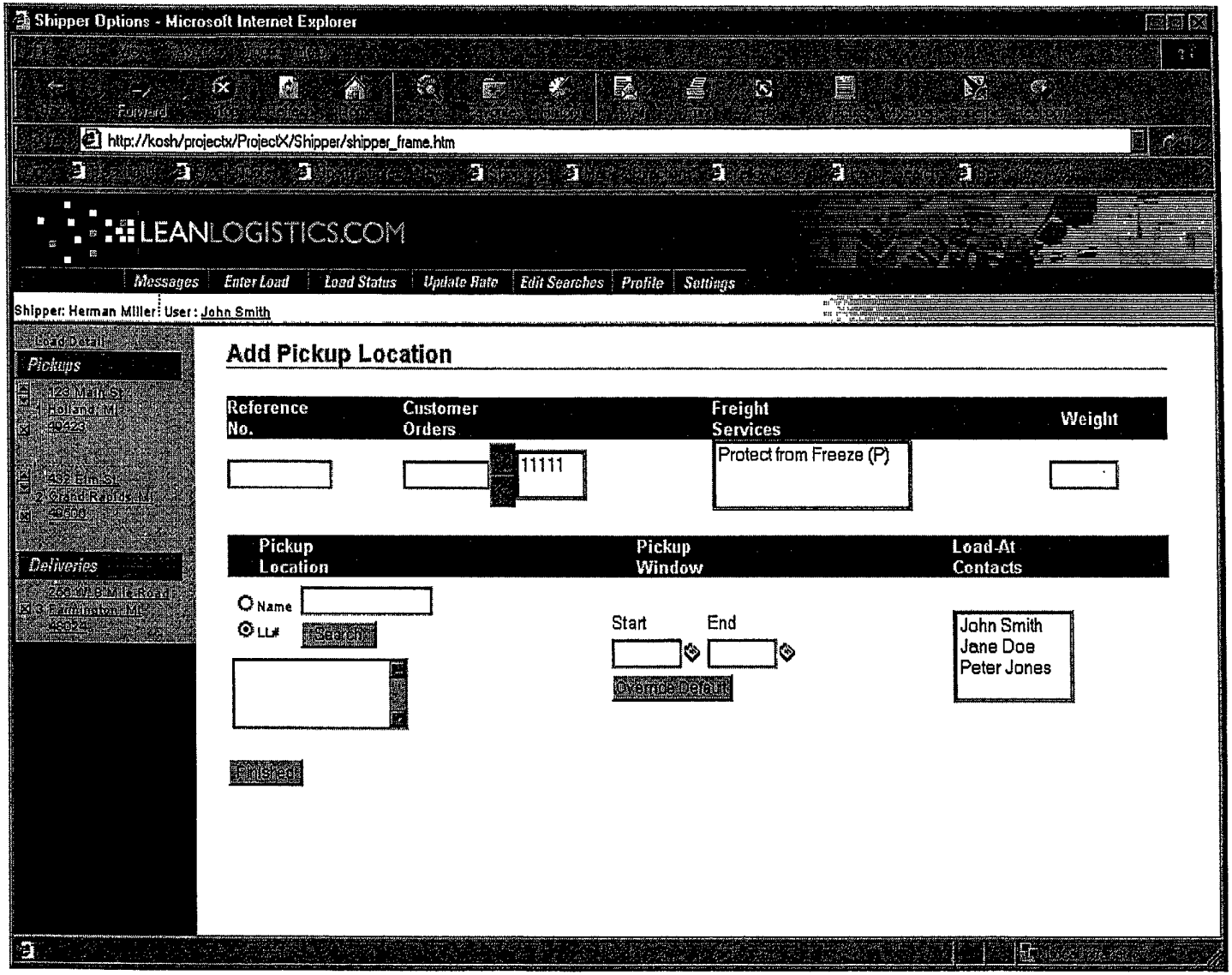

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User: John Smith
Pickups
Deliveries
Add Pickup Location
Reference No.
Customer Orders
11111
Freight Services
Protect from Freeze (P)
Weight
Pickup Location
Name
LL#
Search
Pickup Window
Start
End
Override Default
Load-At Contacts
John Smith
Jane Doe
Peter Jones
Finished

Fig. 3b (304)

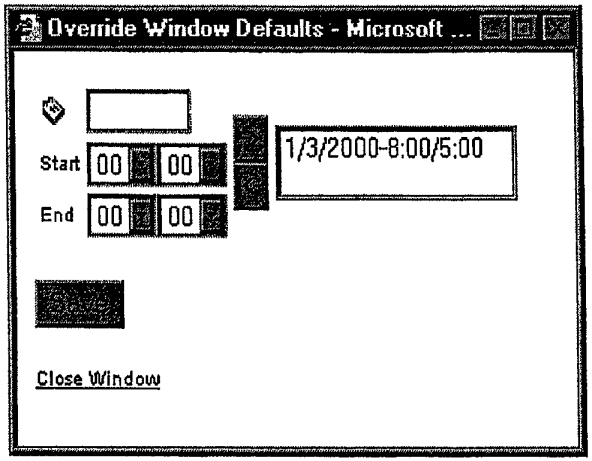

Override Window Defaults - Microsoft ...
Start
00
00
End
00
00
1/3/2000-8:00/5:00
Close Window

Fig. 3c (306)

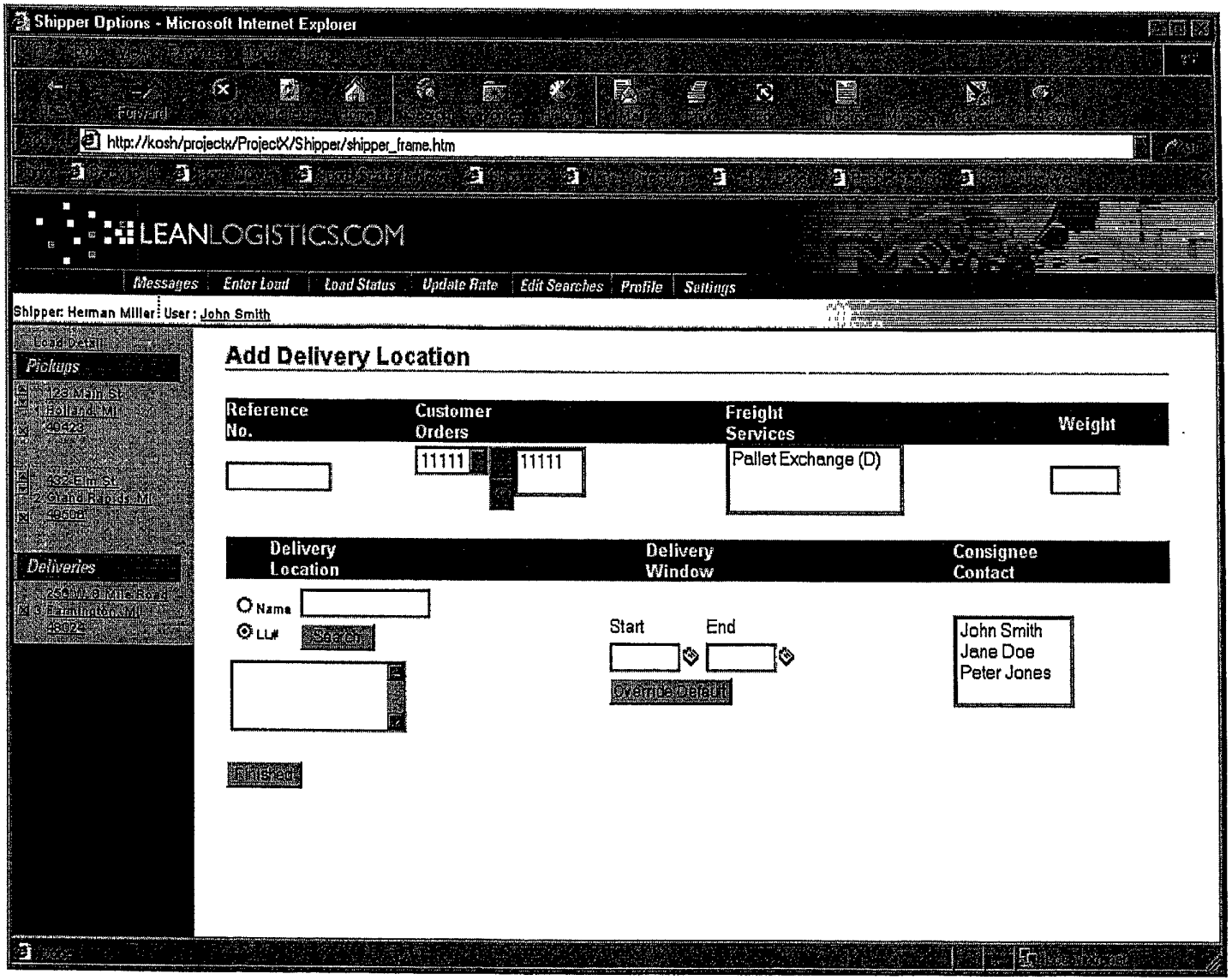

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User : John Smith
Pickups
Deliveries
Add Delivery Location
Reference No.
Customer Orders
11111
11111
Freight Services
Pallet Exchange (D)
Weight
Delivery Location
Name
LL#
Search
Delivery Window
Start
End
Override default
Consignee Contact
John Smith
Jane Doe
Peter Jones
Finished

Fig.3d (308)

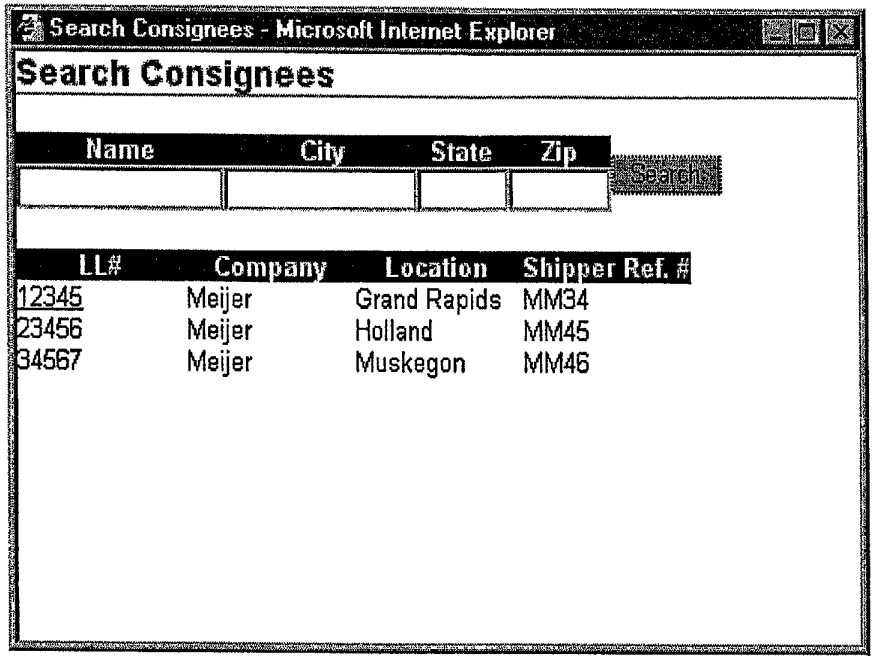

Search Consignees - Microsoft Internet Explorer
Search Consignees
Name
City
State
Zip
Search
LL#
Company
Location
Shipper Ref. #
12345
Meijer
Grand Rapids
MM34
23456
Meijer
Holland
MM45
34567
Meijer
Muskegon
MM46

Fig. 3e (310)

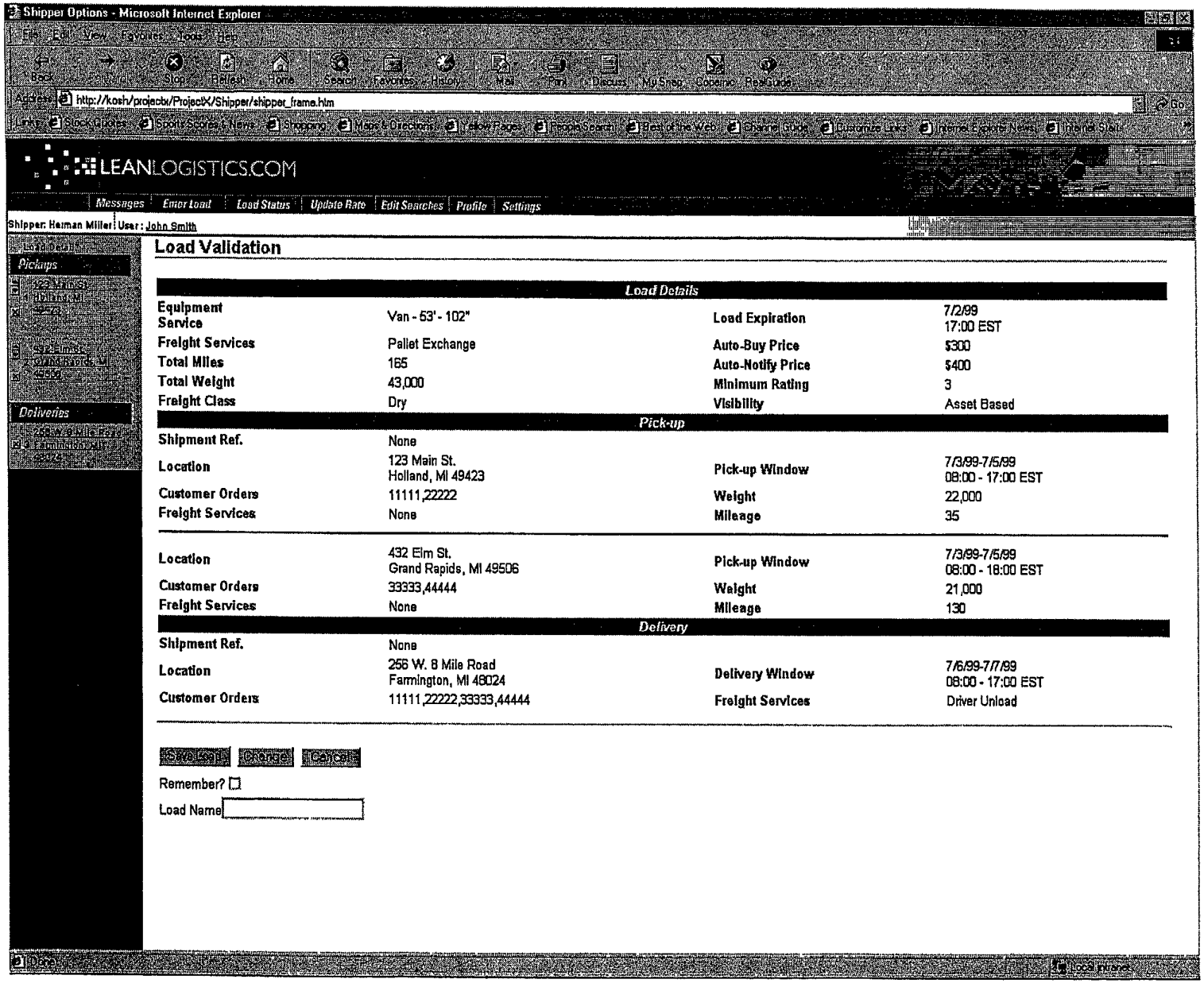

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User: John Smith
Pickups
Deliveries
Load Validation
Load Details
Equipment Service
Van - 53' - 102"
Load Expiration
7/2/99 17:00 EST
Freight Services
Pallet Exchange
Auto-Buy Price
$300
Total Miles
165
Auto-Notify Price
$400
Total Weight
43,000
Minimum Rating
3
Freight Class
Dry
Visibility
Asset Based
Pick-up
Shipment Ref.
None
Location
123 Main St. Holland, MI 49423
Pick-up Window
7/3/99-7/5/99 08:00 - 17:00 EST
Customer Orders
11111,22222
Weight
22,000
Freight Services
None
Mileage
35
Location
432 Elm St. Grand Rapids, MI 49506
Pick-up Window
7/3/99-7/5/99 08:00 - 18:00 EST
Customer Orders
33333,44444
Weight
21,000
Freight Services
None
Mileage
130
Delivery
Shipment Ref.
None
Location
256 W. 8 Mile Road Farmington, MI 48024
Delivery Window
7/6/99-7/7/99 08:00 - 17:00 EST
Customer Orders
11111,22222,33333,44444
Freight Services
Driver Unload
Save Load
Change
Cancel
Remember?
Load Name

Fig. 3f (312)

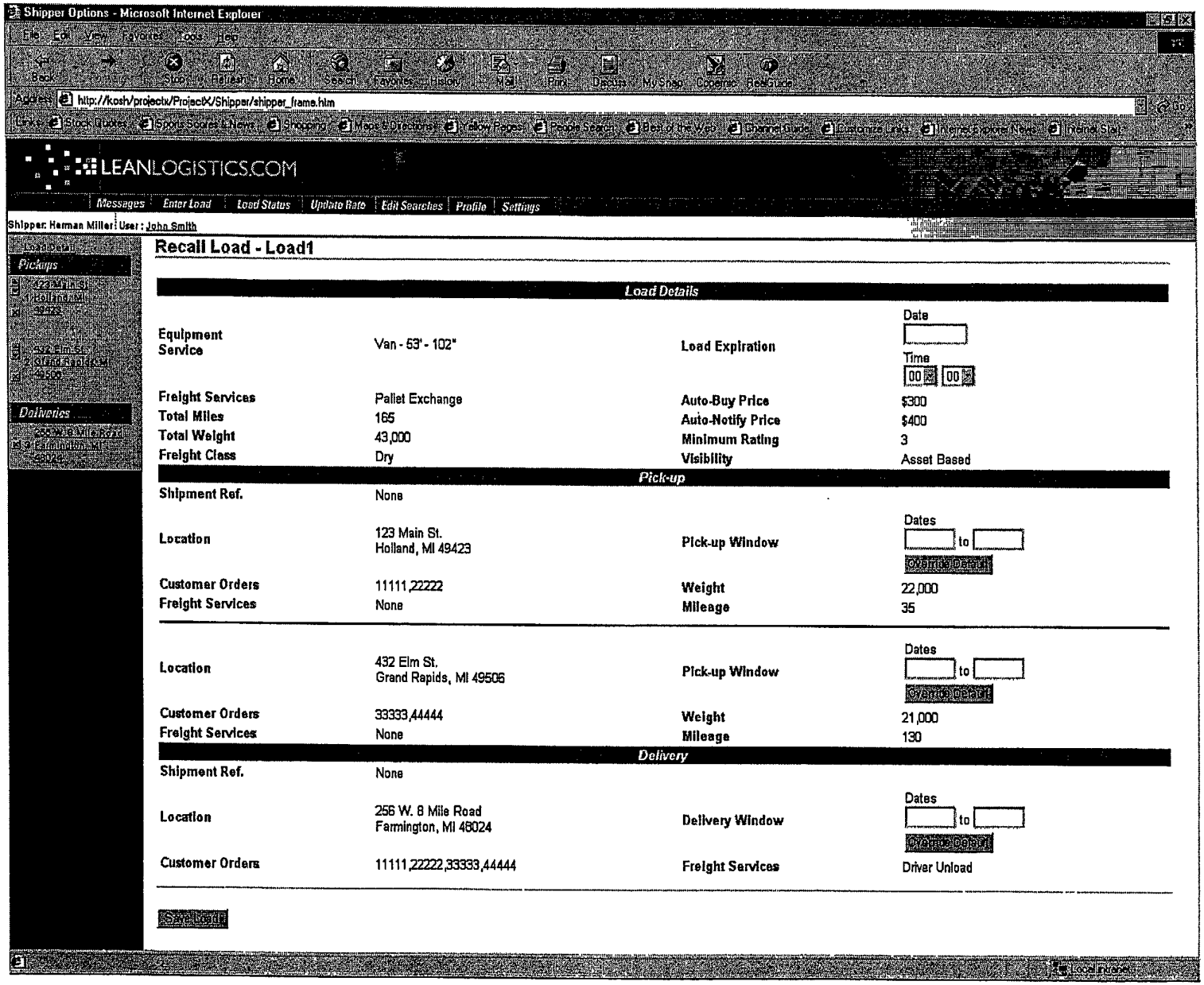

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User : John Smith
Pickups
Deliveries
Recall Load - Load1
Load Details
Equipment Service
Van - 53' - 102"
Load Expiration
Date
Time
Freight Services
Pallet Exchange
Auto-Buy Price
$300
Total Miles
165
Auto-Notify Price
$400
Total Weight
43,000
Minimum Rating
3
Freight Class
Dry
Visibility
Asset Based
Pick-up
Shipment Ref.
None
Location
123 Main St.
Holland, MI 49423
Pick-up Window
Dates
to
Override Default
Customer Orders
11111,22222
Weight
22,000
Freight Services
None
Mileage
35
Location
432 Elm St.
Grand Rapids, MI 49506
Pick-up Window
Dates
to
Override Default
Customer Orders
33333,44444
Weight
21,000
Freight Services
None
Mileage
130
Delivery
Shipment Ref.
None
Location
256 W. 8 Mile Road
Farmington, MI 48024
Delivery Window
Dates
to
Override Default
Customer Orders
11111,22222,33333,44444
Freight Services
Driver Unload
Save Load#

Fig. 3g (314)

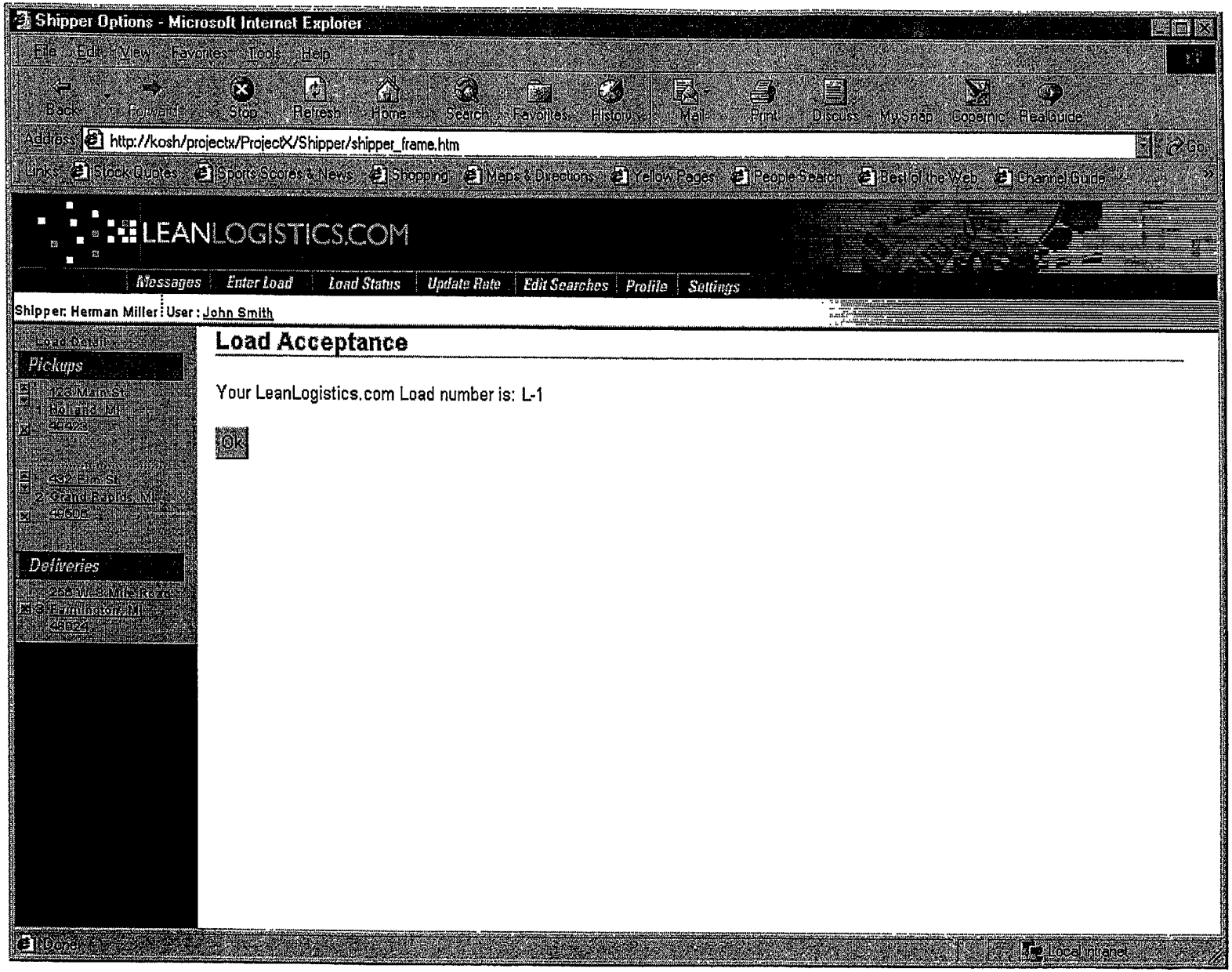
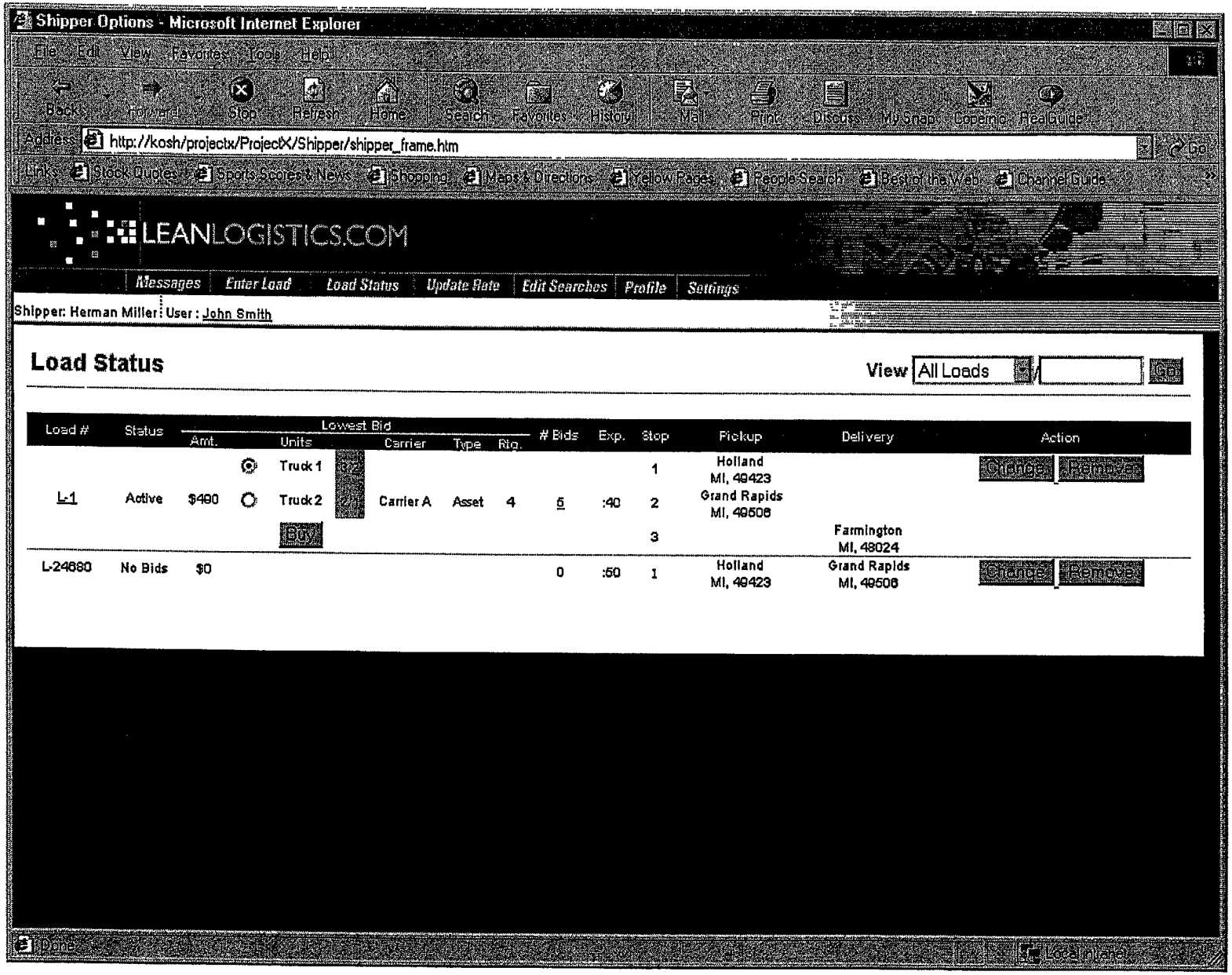


Fig. 3h (316)

09482154.011200


Shipper Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
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Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Load Status
View All Loads Go
Load # Status Lowest Bid Amt. Units Carrier Type Rtg. # Bids Exp. Stop Pickup Delivery Action
L-1 Active $490 Truck 1 Buy Carrier A Asset 4 6 :40 1 Holland MI, 49423 Change Remove
Truck 2 2 Grand Rapids MI, 49506
3 Farmington MI, 48024
L-24680 No Bids $0 0 :50 1 Holland MI, 49423 Grand Rapids MI, 49506 Change Remove
Done
Local intranet

Fig. 4a (402)

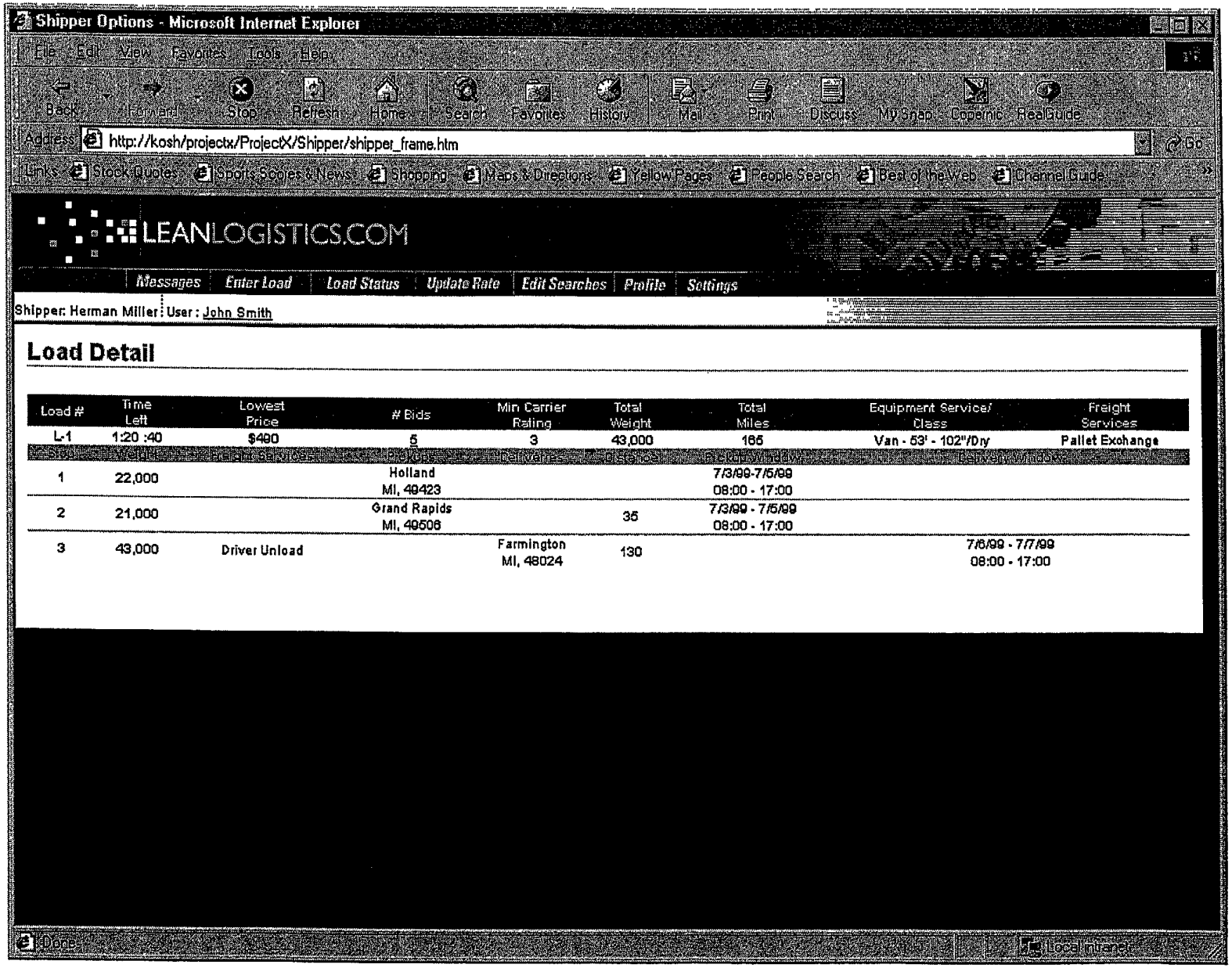


Fig. 4b (404)

09482154 .011200

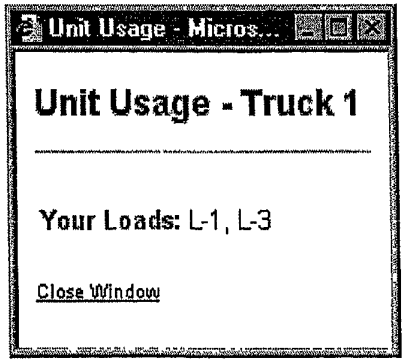

Unit Usage - Micros...
Unit Usage - Truck 1
Your Loads: L-1, L-3
Close Window

Fig. 4c (406)

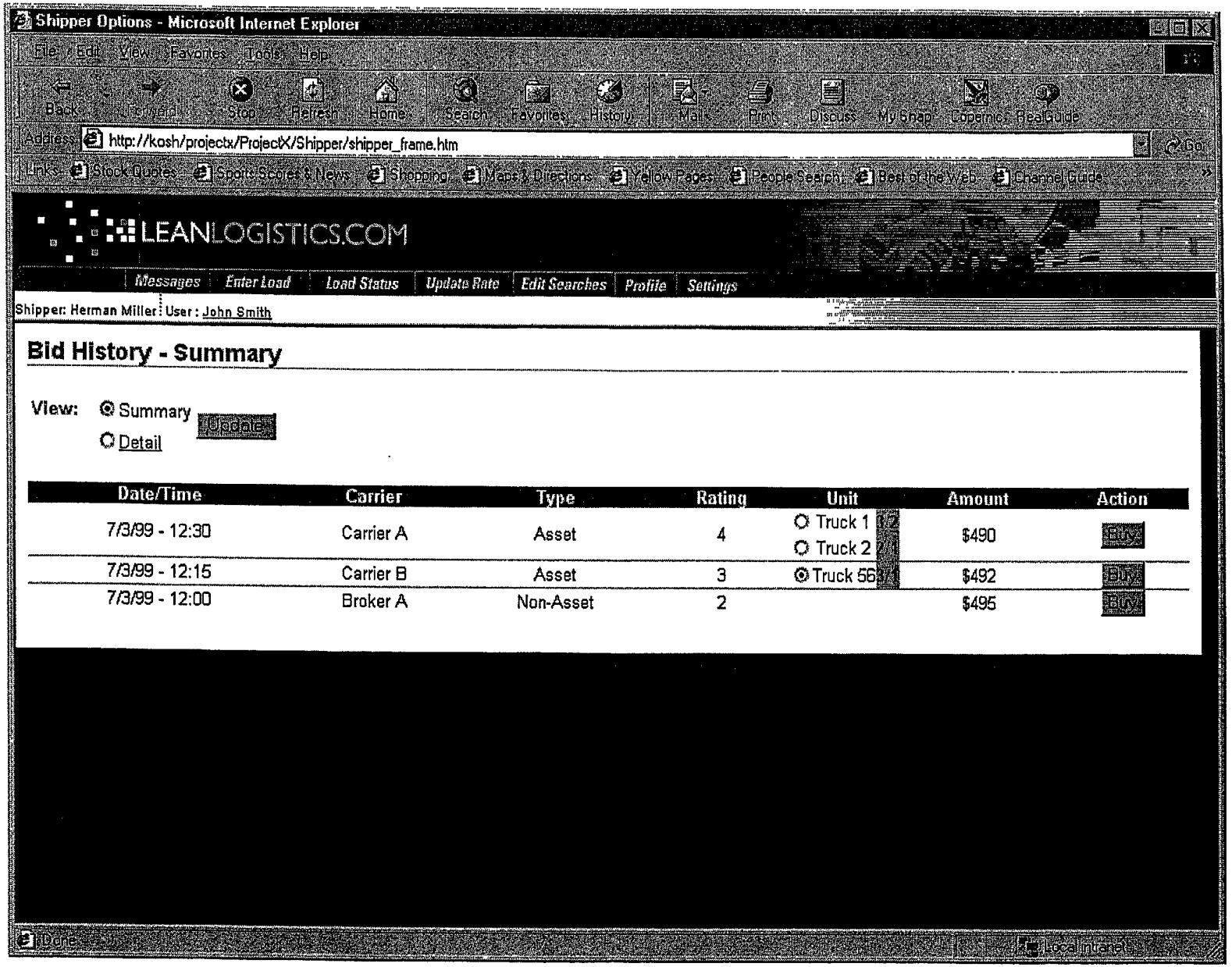
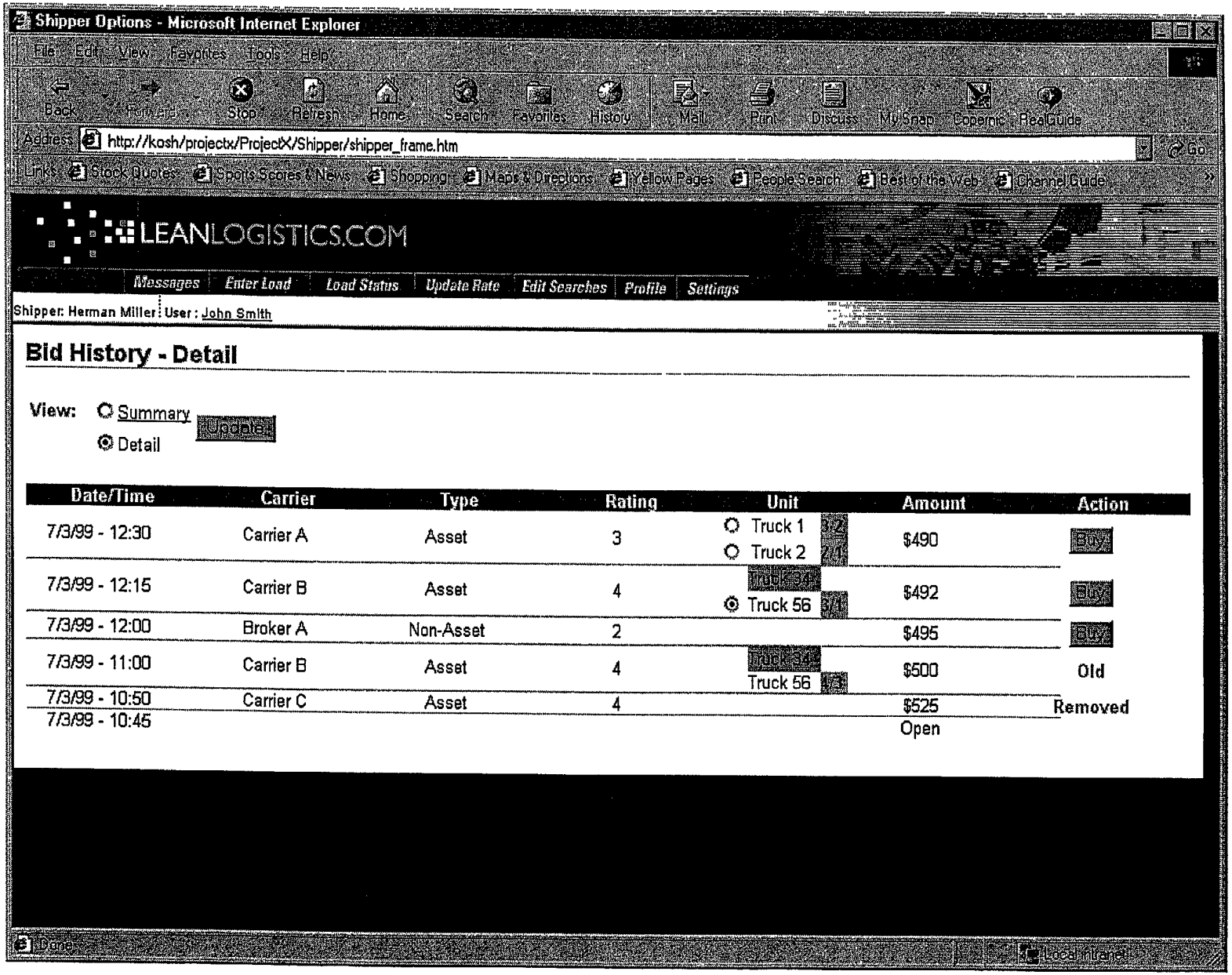


Fig. 4d (408)

09482154 .011200


Shipper Options - Microsoft Internet Explorer
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Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
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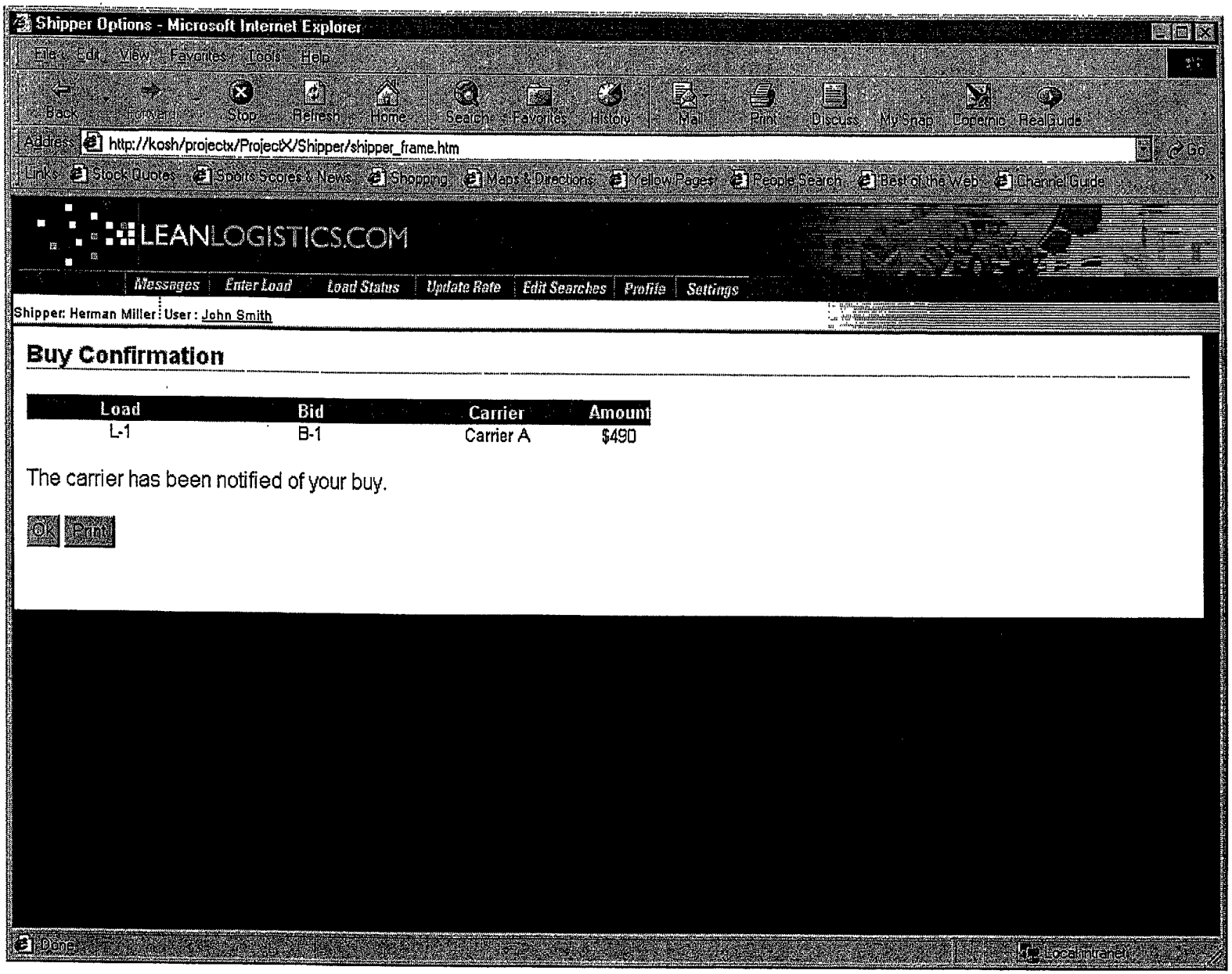
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Bid History - Detail
View: Summary Detail Update
Date/Time Carrier Type Rating Unit Amount Action
7/3/99 - 12:30 Carrier A Asset 3 Truck 1 Truck 2 $490 Buy
7/3/99 - 12:15 Carrier B Asset 4 Truck 56 $492 Buy
7/3/99 - 12:00 Broker A Non-Asset 2 $495 Buy
7/3/99 - 11:00 Carrier B Asset 4 $500 Old
7/3/99 - 10:50 Carrier C Asset 4 $525 Removed
7/3/99 - 10:45 Open
Done
Local intranet

Fig. 4e (410)


Shipper Options - Microsoft Internet Explorer
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Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Buy Confirmation
Load Bid Carrier Amount
L-1 B-1 Carrier A $490
The carrier has been notified of your buy.
ok Print
Done
Local intranet

Fig. 4f (412)

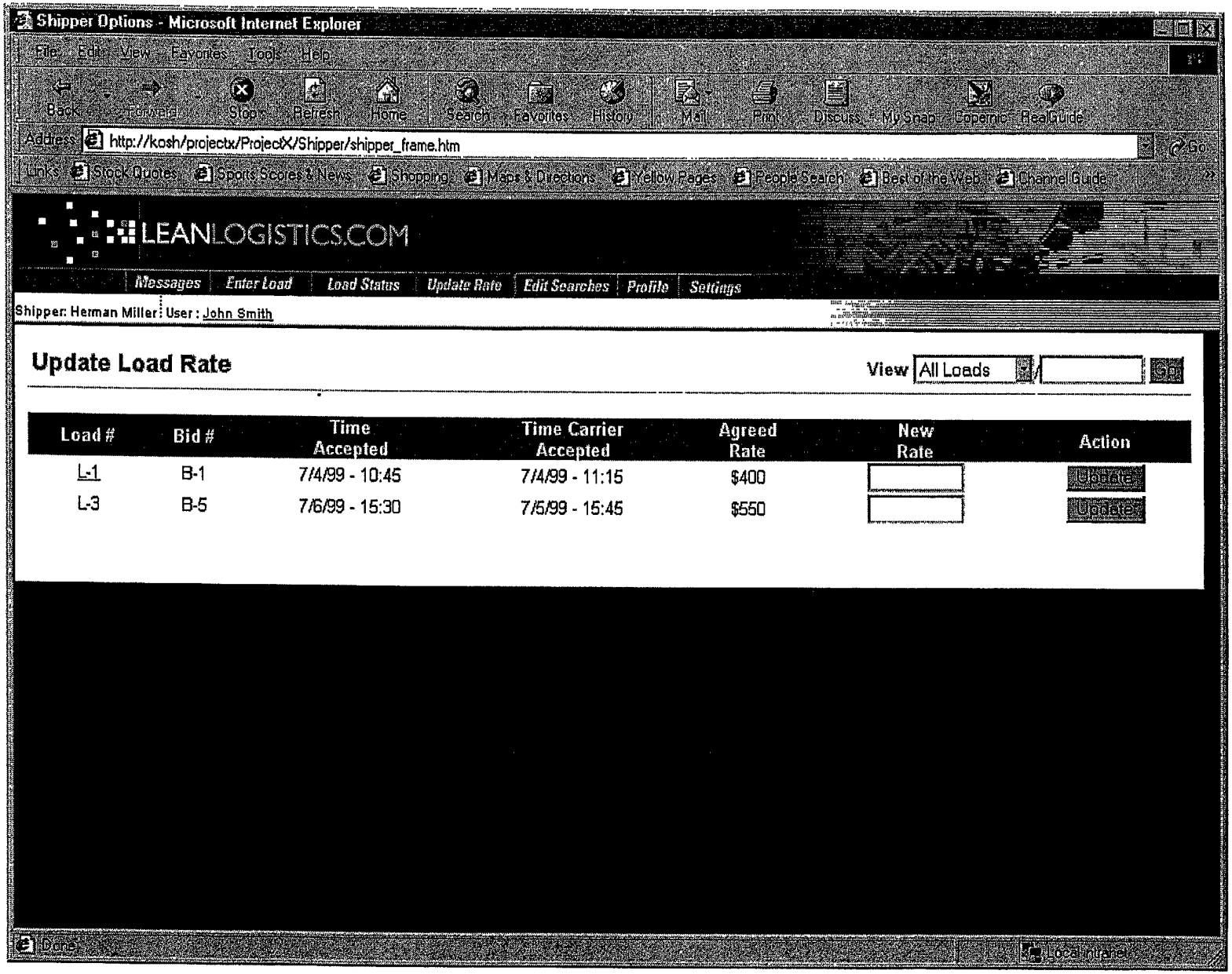
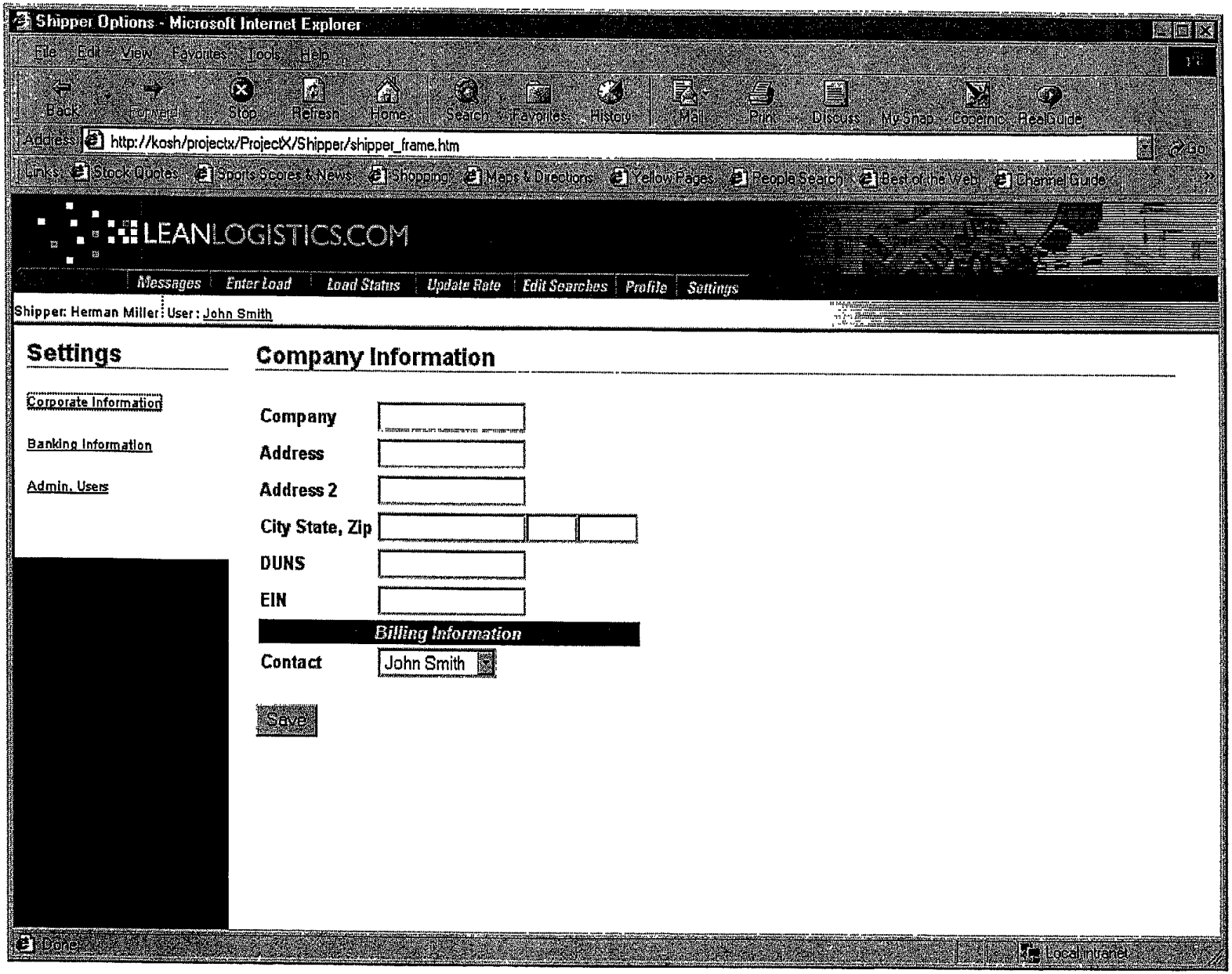


Fig. 5 (502)

09482154 .011200


Shipper Options - Microsoft Internet Explorer
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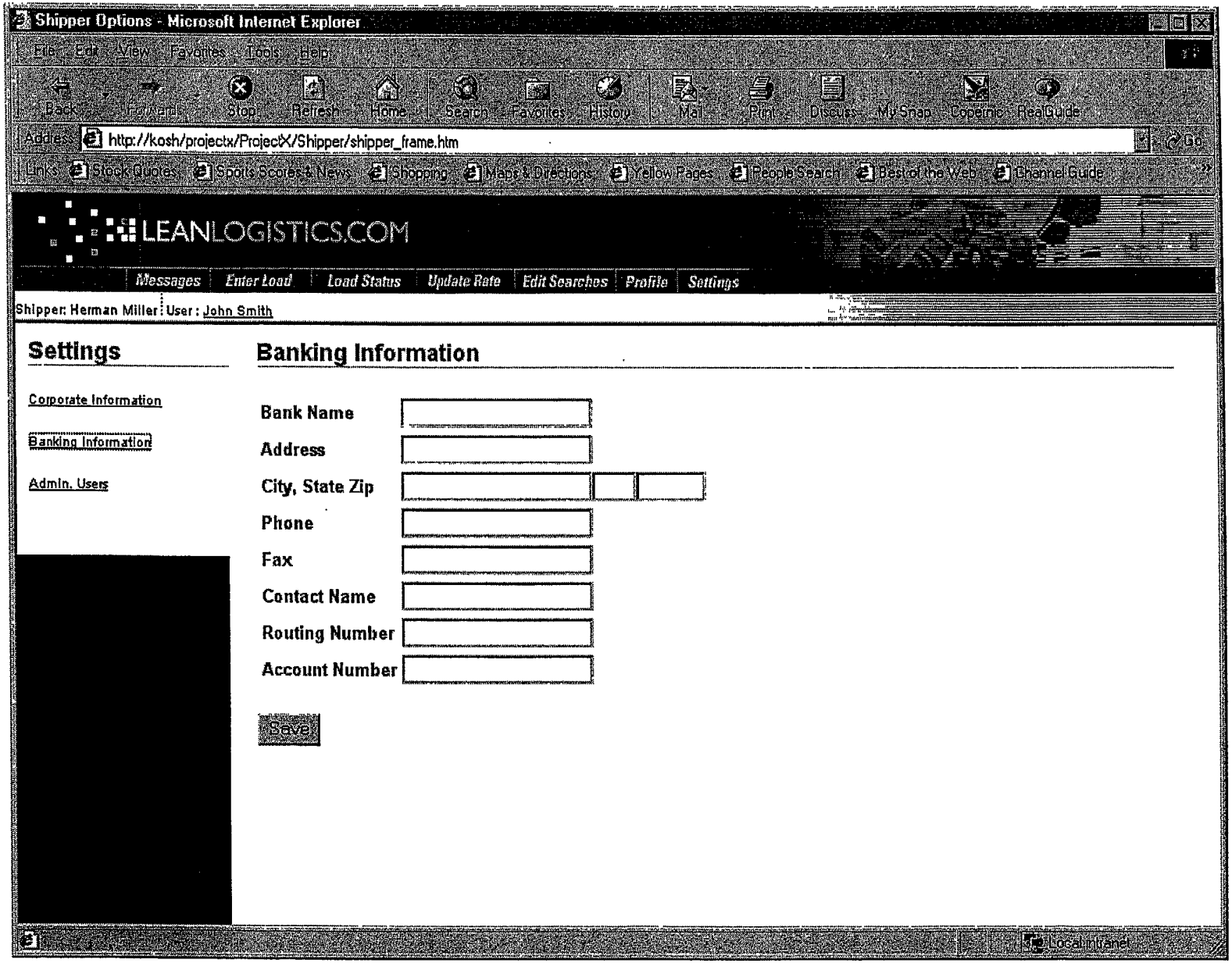
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Settings
Corporate Information
Banking Information
Admin. Users
Company Information
Company
Address
Address 2
City State, Zip
DUNS
EIN
Billing Information
Contact
John Smith
Save
Done
Local intranet

Fig. 6a (602)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LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Settings
Corporate Information
Banking Information
Admin. Users
Banking Information
Bank Name
Address
City, State Zip
Phone
Fax
Contact Name
Routing Number
Account Number
Save
Local intranet

Fig. 6b (604)

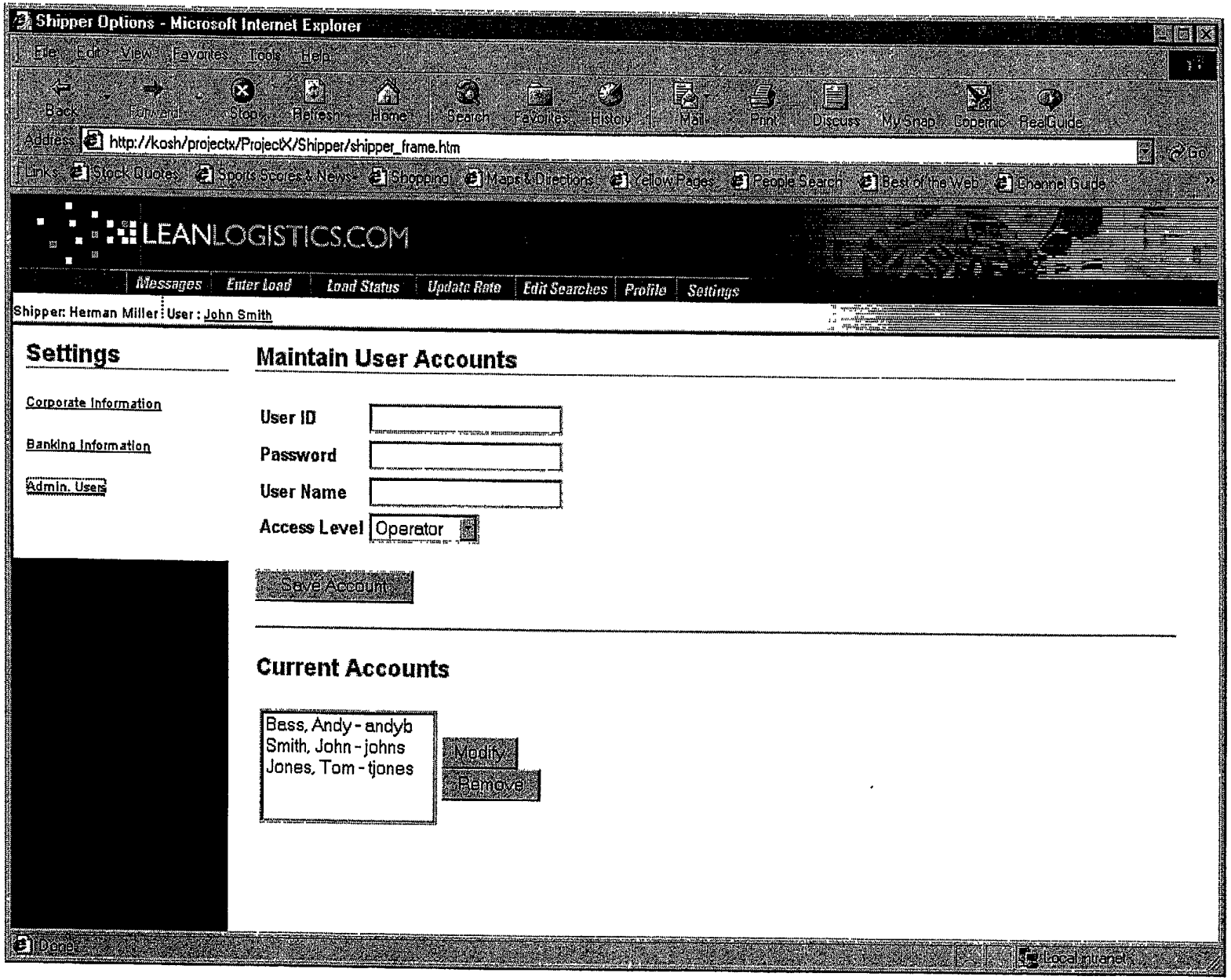


Fig. 6c (606)

09482154 .011200

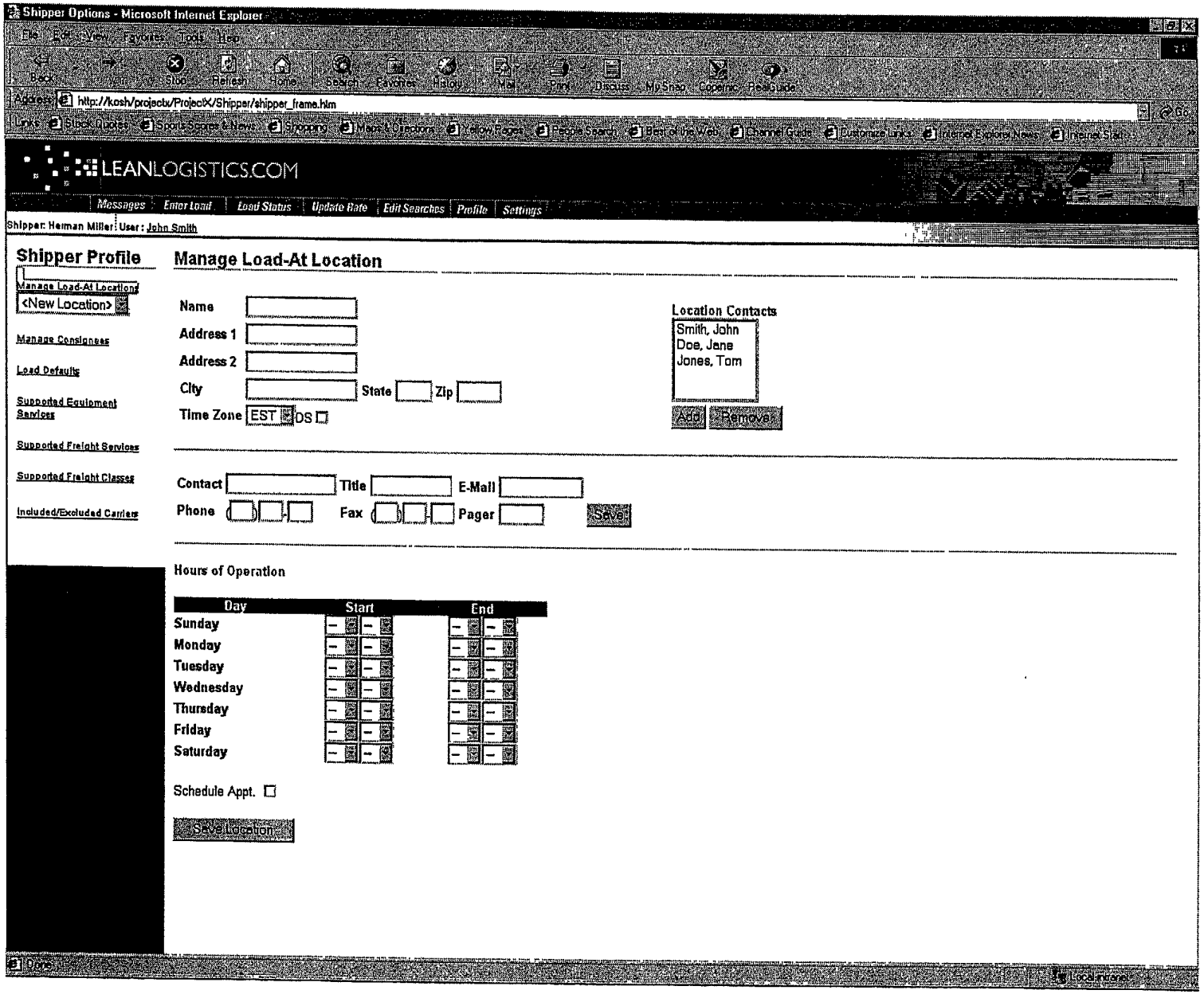
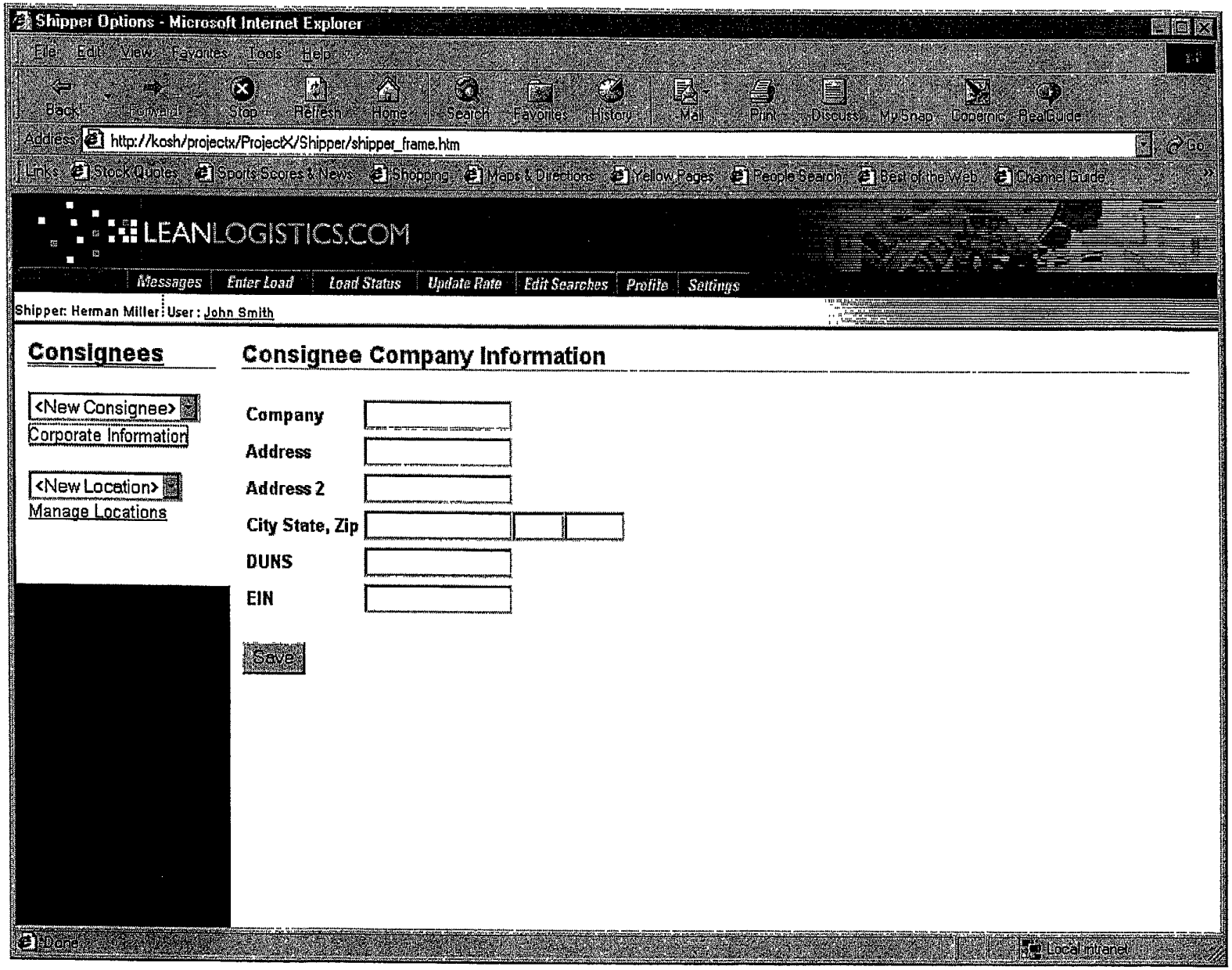

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User: John Smith
Shipper Profile
Manage Load-At Locations
<New Location>
Manage Consignees
Load Defaults
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Carriers
Manage Load-At Location
Name
Address 1
Address 2
City
State
Zip
Time Zone
EST
DS
Location Contacts
Smith, John
Doe, Jane
Jones, Tom
Add
Remove
Contact
Title
E-Mail
Phone
Fax
Pager
Save
Hours of Operation
Day
Start
End
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Schedule Appt.
Save Location
Done

Fig. 7a (702)


Shipper Options - Microsoft Internet Explorer
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LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Consignees
<New Consignee>
Corporate Information
<New Location>
Manage Locations
Consignee Company Information
Company
Address
Address 2
City State, Zip
DUNS
EIN
Save
Done
Local intranet

Fig. 7b (704)

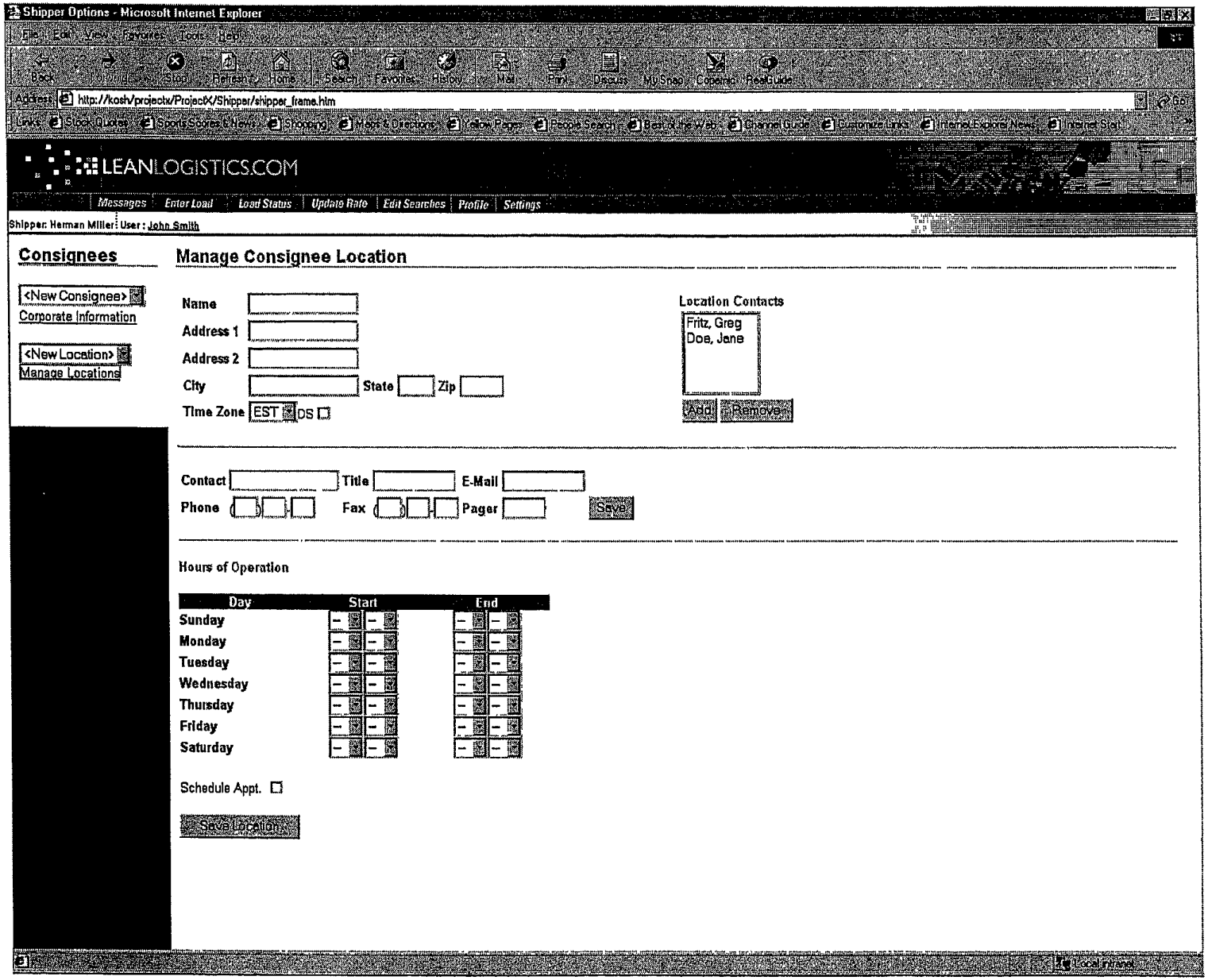
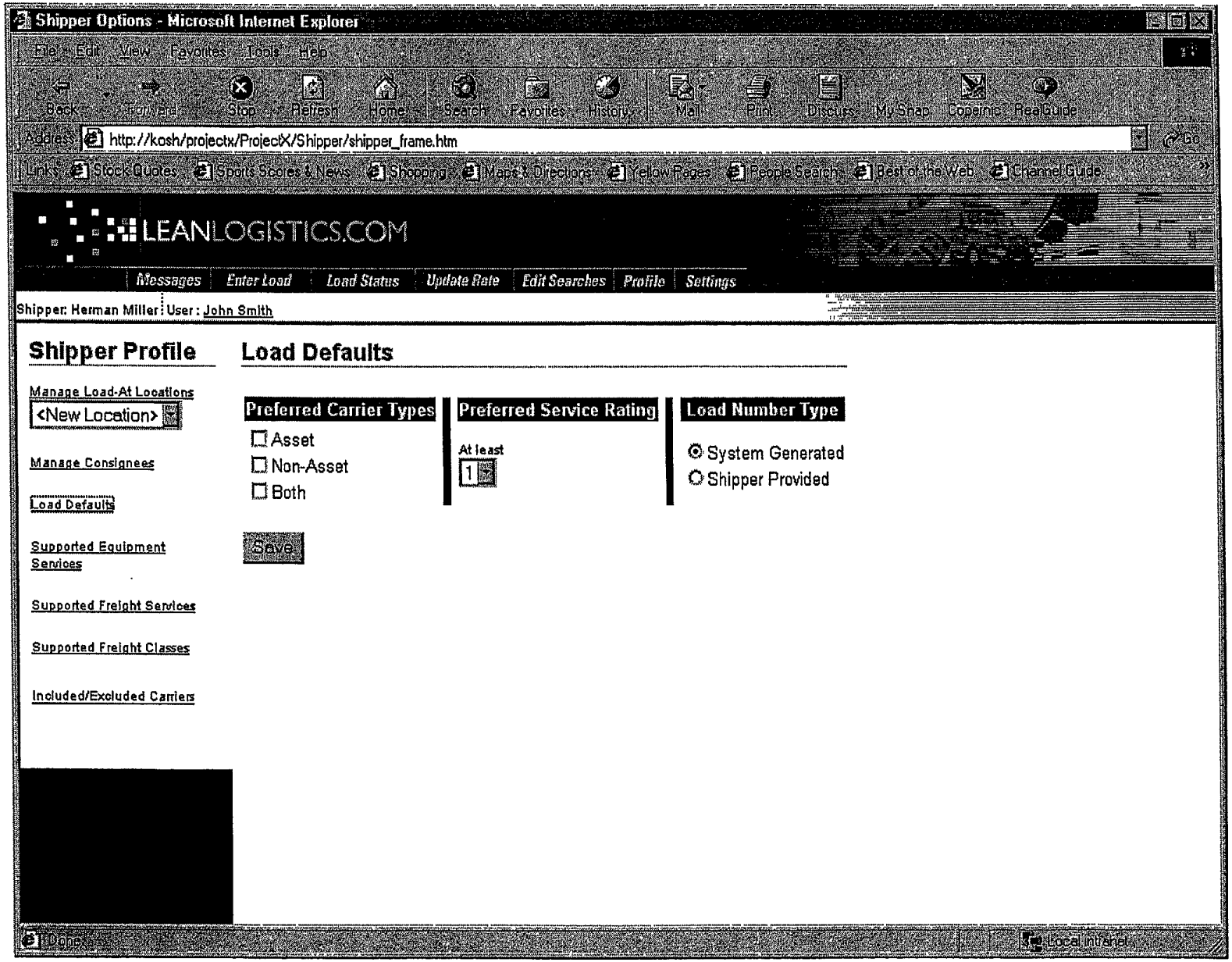


Fig. 7c (706)

09482154 .011200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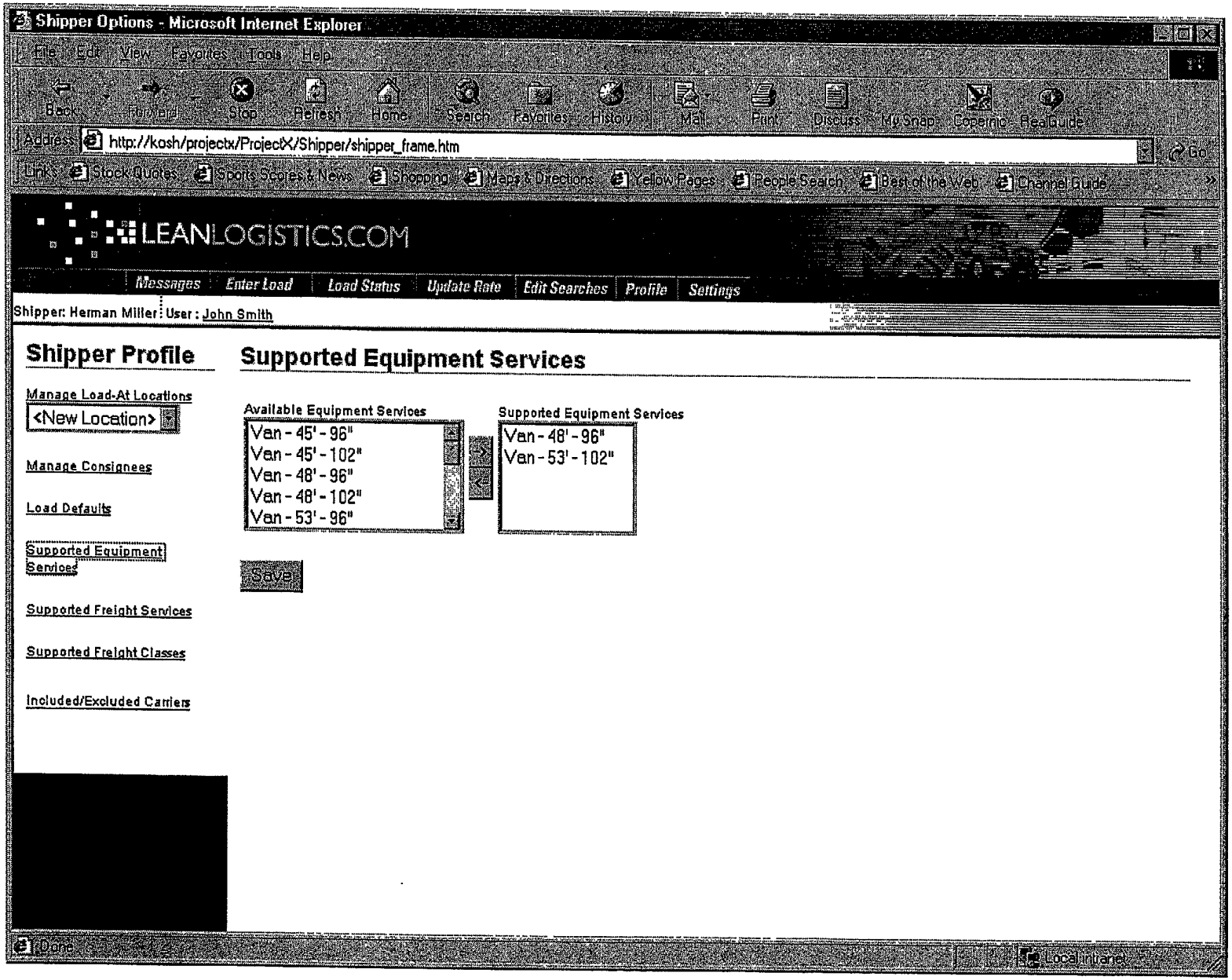
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Shipper Profile
Manage Load-At Locations
<New Location>
Manage Consignees
Load Defaults
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Carriers
Load Defaults
Preferred Carrier Types
Asset
Non-Asset
Both
Preferred Service Rating
At least
1
Load Number Type
System Generated
Shipper Provided
Save
Done
Local intranet

Fig. 7d (708)


Shipper Options - Microsoft Internet Explorer
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LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Shipper Profile
Manage Load-At Locations
<New Location>
Manage Consignees
Load Defaults
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Carriers
Supported Equipment Services
Available Equipment Services
Van - 45' - 96"
Van - 45' - 102"
Van - 48' - 96"
Van - 48' - 102"
Van - 53' - 96"
Supported Equipment Services
Van - 48' - 96"
Van - 53' - 102"
Save
Done
Local intranet

Fig. 7e (710)

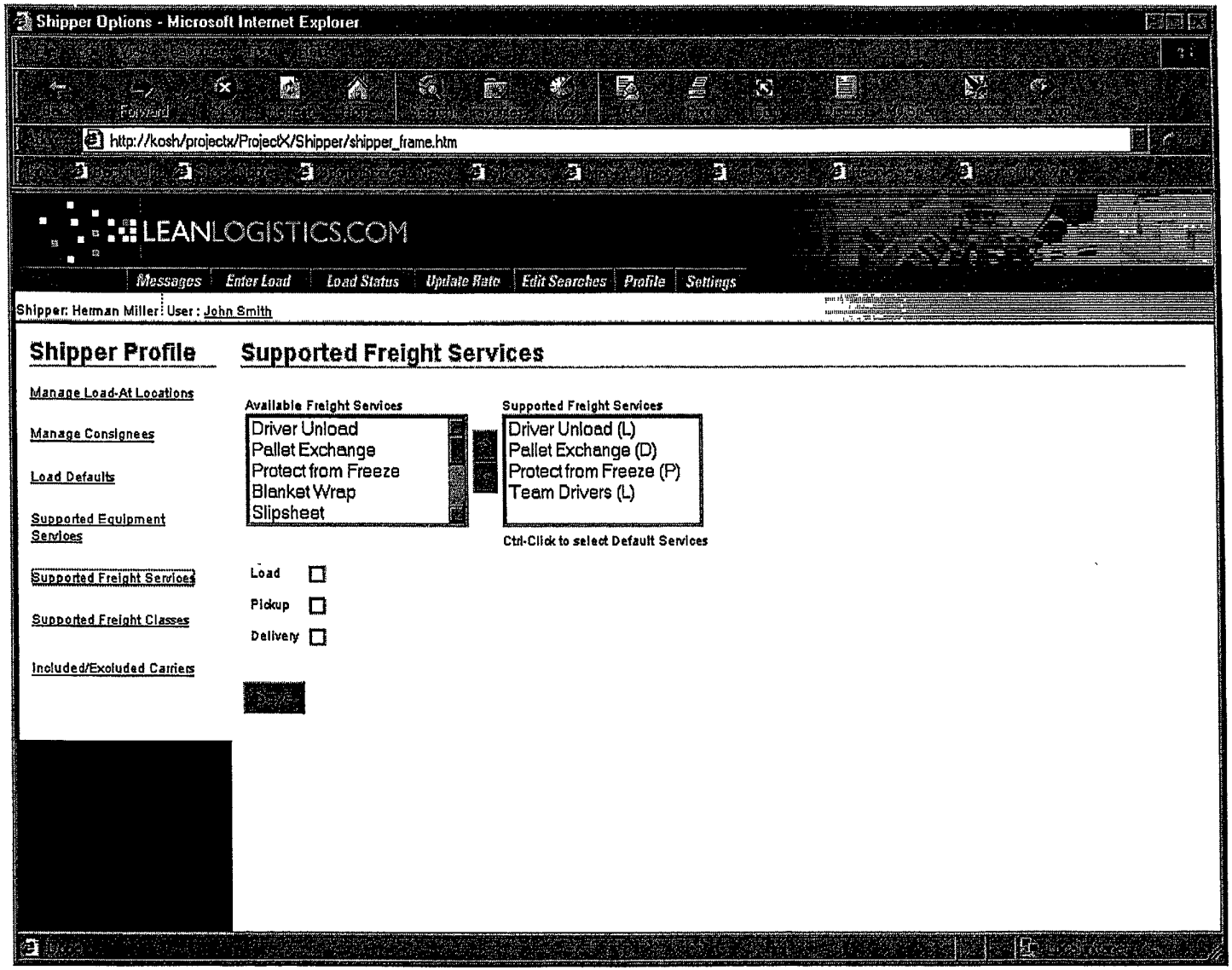

Shipper Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
LEANLOGISTICS.COM
Messages
Enter Load
Load Status
Update Rate
Edit Searches
Profile
Settings
Shipper: Herman Miller
User : John Smith
Shipper Profile
Manage Load-At Locations
Manage Consignees
Load Defaults
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Carriers
Supported Freight Services
Available Freight Services
Driver Unload
Pallet Exchange
Protect from Freeze
Blanket Wrap
Slipsheet
Supported Freight Services
Driver Unload (L)
Pallet Exchange (D)
Protect from Freeze (P)
Team Drivers (L)
Ctrl-Click to select Default Services
Load
Pickup
Delivery

Fig. 7f (712)

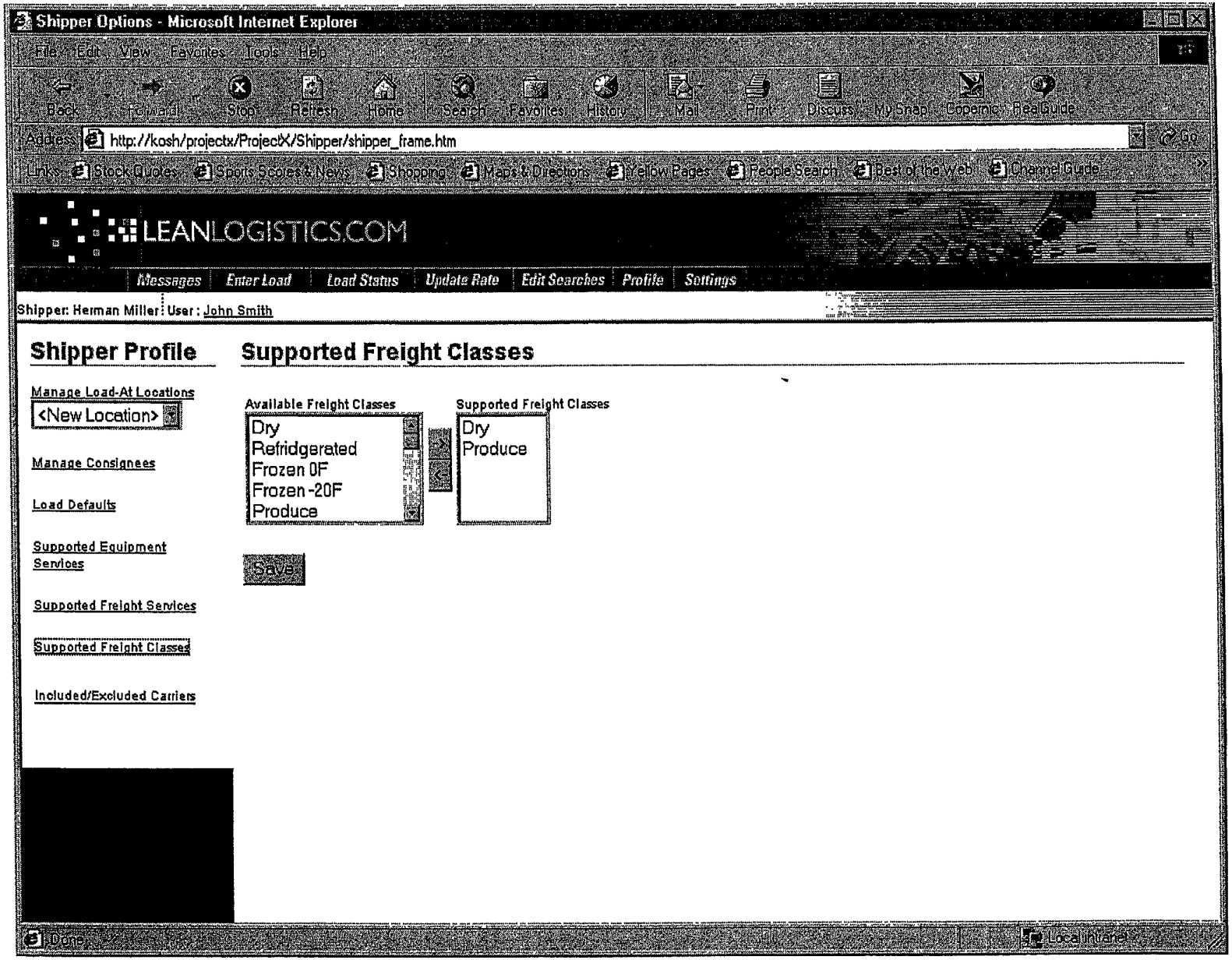
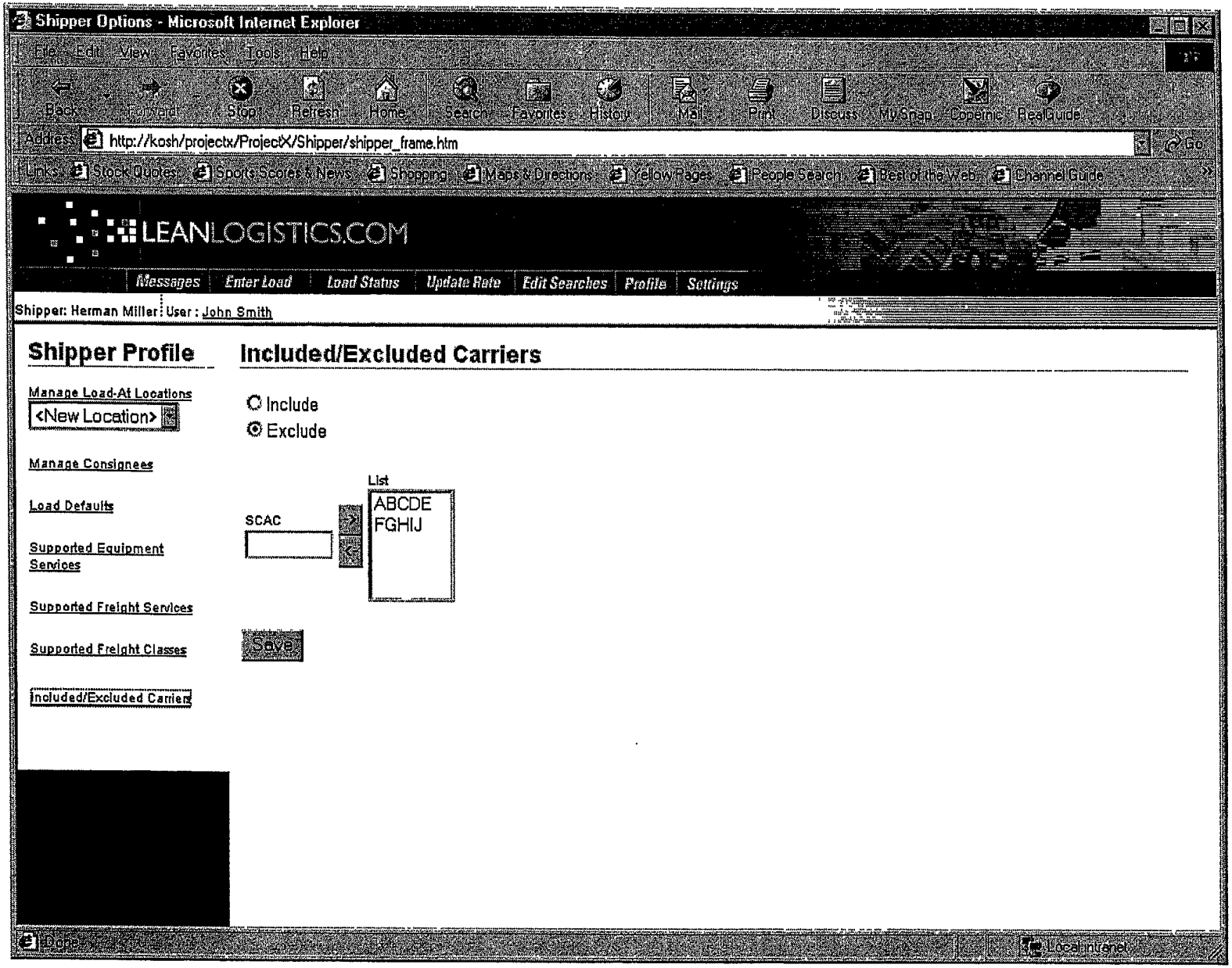


Fig. 7g (714)

09482154 . 011200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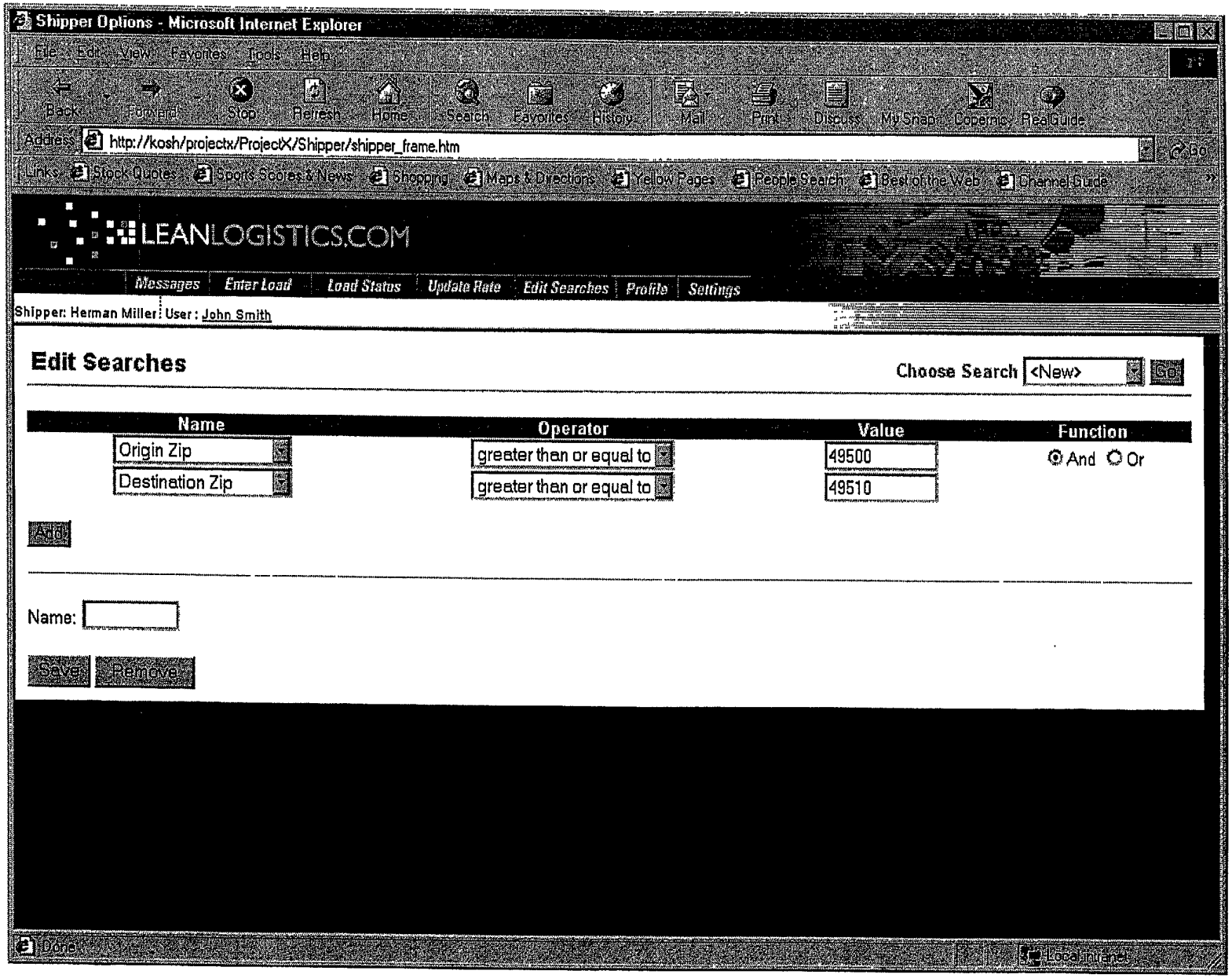
LEANLOGISTICS.COM
Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Shipper Profile
Manage Load-At Locations
<New Location>
Manage Consignees
Load Defaults
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Carriers
Included/Excluded Carriers
Include
Exclude
SCAC
List
ABCDE
FGHIJ
Save
Local intranet

Fig. 7h (716)


Shipper Options - Microsoft Internet Explorer
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Address http://kosh/projectx/ProjectX/Shipper/shipper_frame.htm
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Messages Enter Load Load Status Update Rate Edit Searches Profile Settings
Shipper: Herman Miller User : John Smith
Edit Searches
Choose Search <New> Go
Name
Operator
Value
Function
Origin Zip
greater than or equal to
49500
And Or
Destination Zip
greater than or equal to
49510
Add
Name:
Save Remove
Done
Local intranet

Fig. 8 (802)

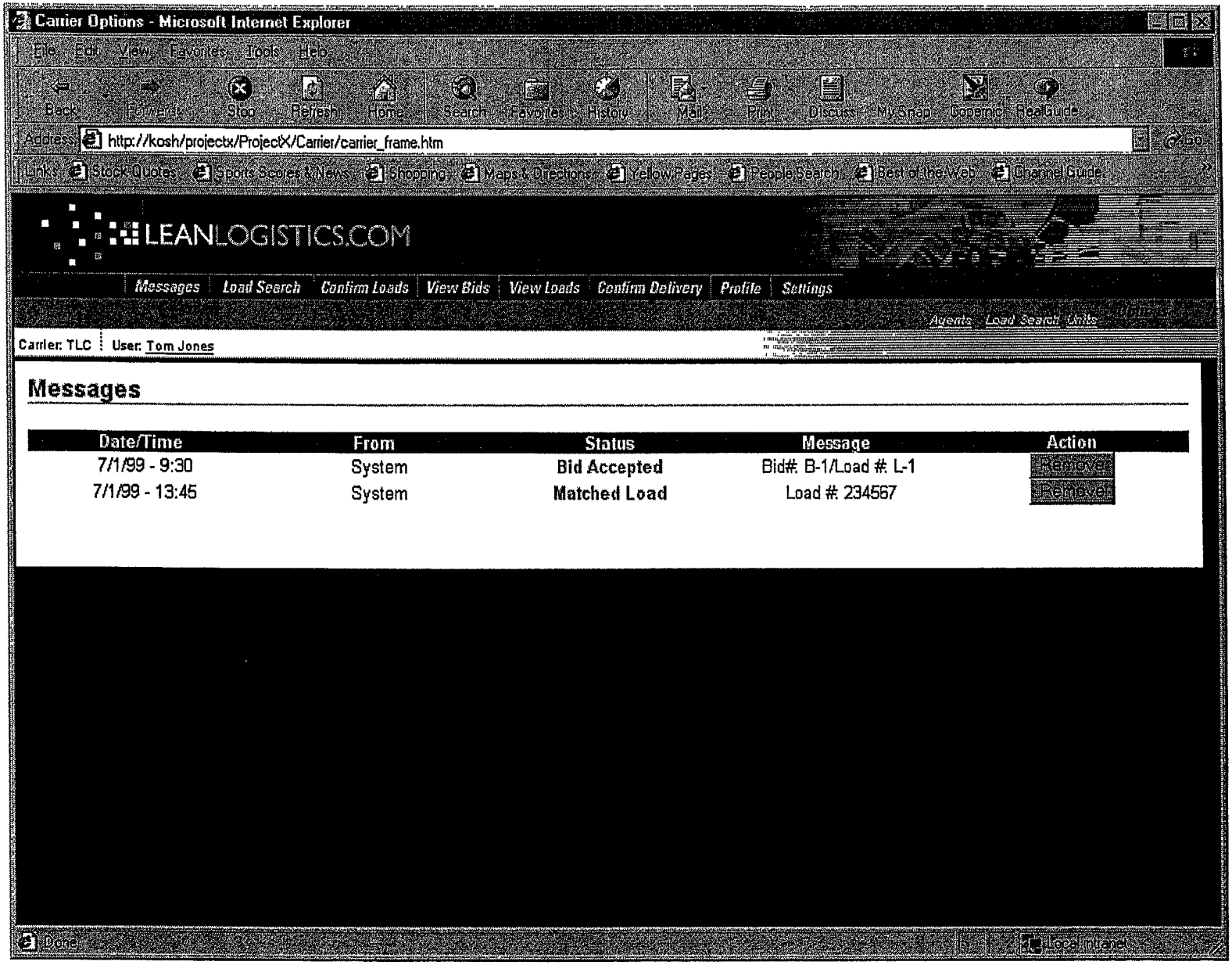
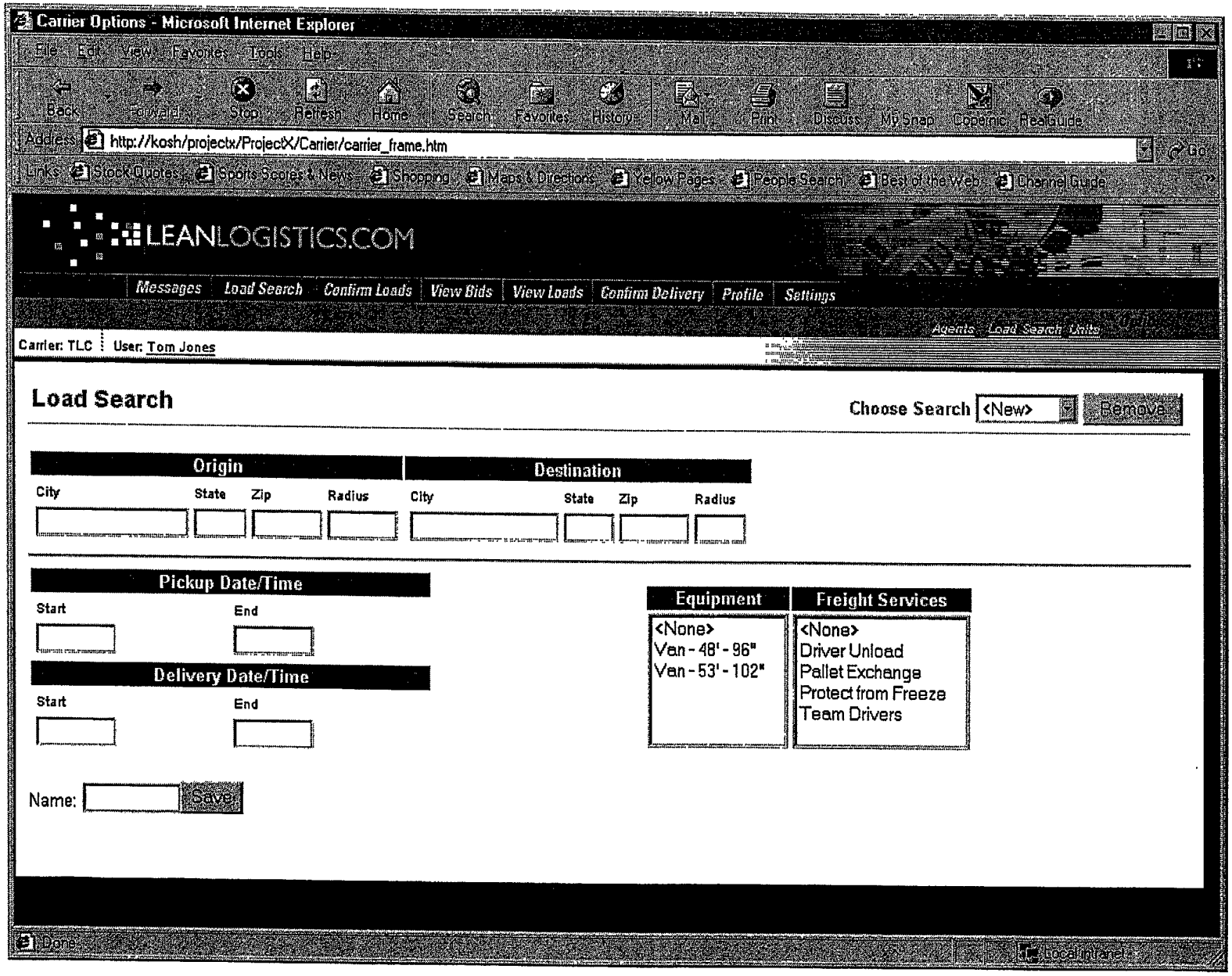


Fig. 9 (902)

09482154 .011200


Carrier Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
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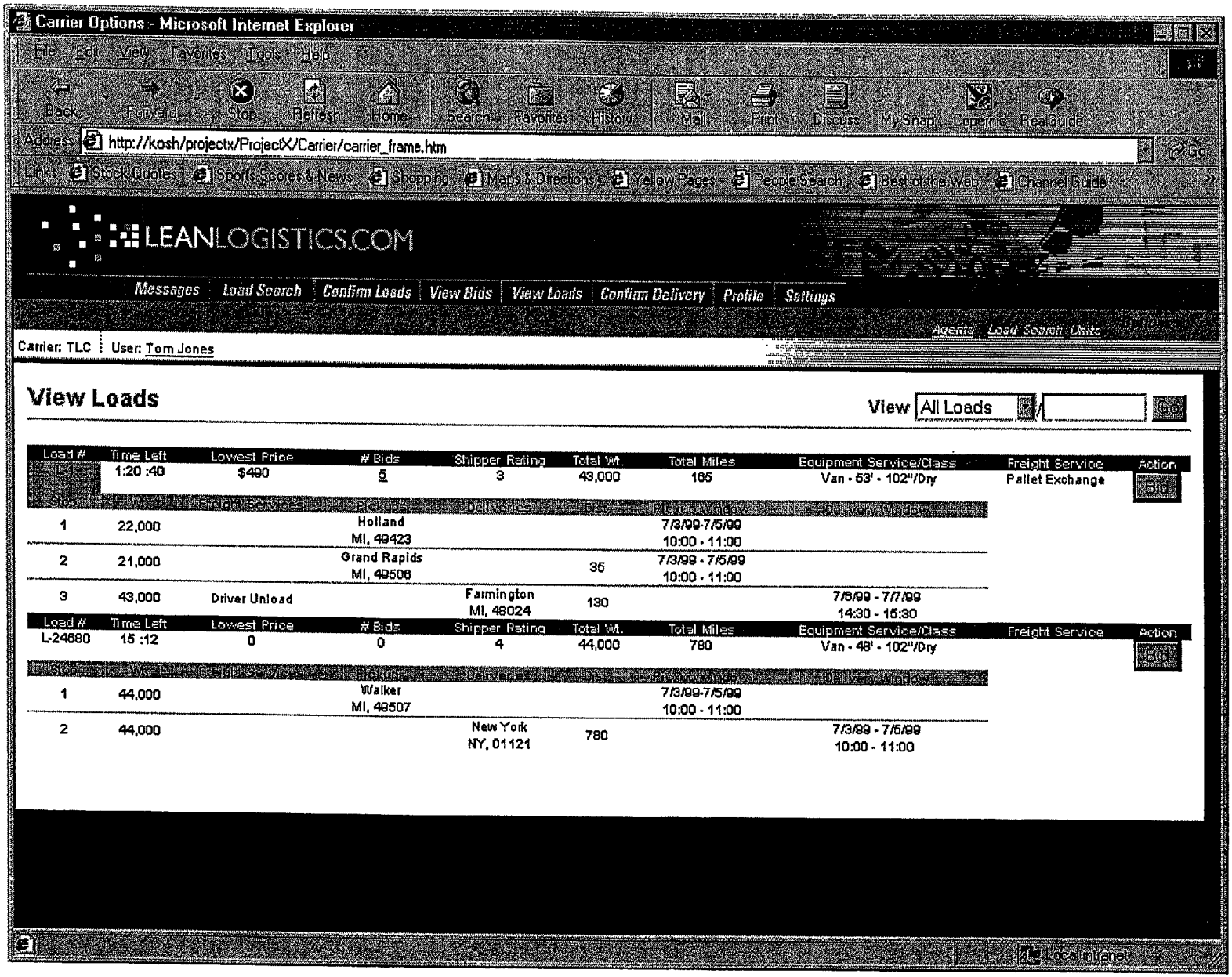
Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Load Search
Choose Search <New> Remove
Origin
City State Zip Radius
Destination
City State Zip Radius
Pickup Date/Time
Start End
Delivery Date/Time
Start End
Equipment
<None>
Van - 48' - 96"
Van - 53' - 102"
Freight Services
<None>
Driver Unload
Pallet Exchange
Protect from Freeze
Team Drivers
Name: Save
Done
Local intranet

Fig. 10 (1002)


Carrier Options - Microsoft Internet Explorer
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Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
View Loads
View All Loads Go
Load # Time Left Lowest Price # Bids Shipper Rating Total Wt. Total Miles Equipment Service/Class Freight Service Action
1:20 :40 $490 5 3 43,000 165 Van - 53' - 102"/Dry Pallet Exchange Bid
Stop Wt. Freight Service Pickup/Delivery Dist. Pickup Window Delivery Window
1 22,000 Holland MI, 49423 7/3/99-7/5/99 10:00 - 11:00
2 21,000 Grand Rapids MI, 49506 35 7/3/99 - 7/5/99 10:00 - 11:00
3 43,000 Driver Unload Farmington MI, 48024 130 7/6/99 - 7/7/99 14:30 - 15:30
Load # Time Left Lowest Price # Bids Shipper Rating Total Wt. Total Miles Equipment Service/Class Freight Service Action
L-24680 15 :12 0 0 4 44,000 780 Van - 48' - 102"/Dry Bid
Stop Wt. Freight Service Pickup/Delivery Dist. Pickup Window Delivery Window
1 44,000 Walker MI, 49507 7/3/99-7/5/99 10:00 - 11:00
2 44,000 New York NY, 01121 780 7/3/99 - 7/5/99 10:00 - 11:00

Fig. 11a (1102)

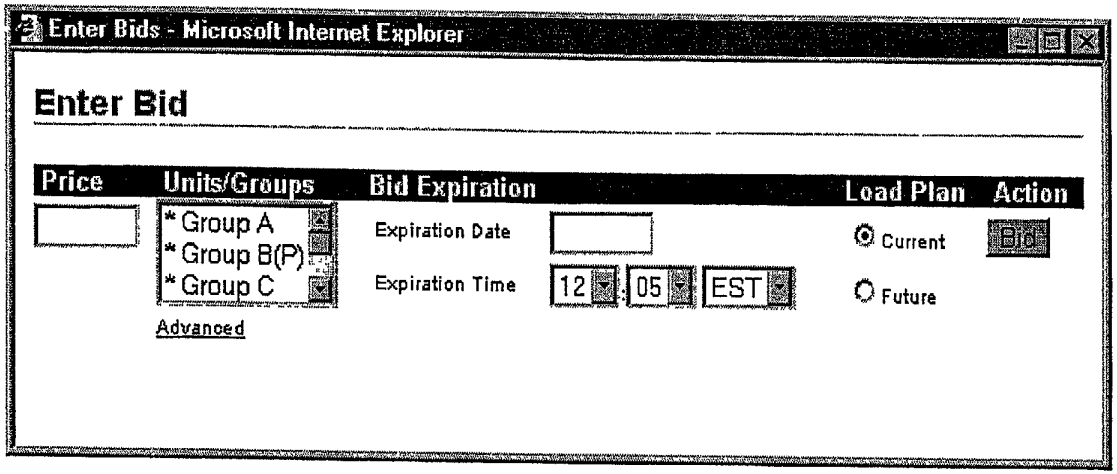

Enter Bids - Microsoft Internet Explorer
Enter Bid
Price
Units/Groups
Bid Expiration
Load Plan
Action
* Group A
* Group B(P)
* Group C
Advanced
Expiration Date
Expiration Time
12
05
EST
Current
Future
Bid

Fig. 11b (1104)

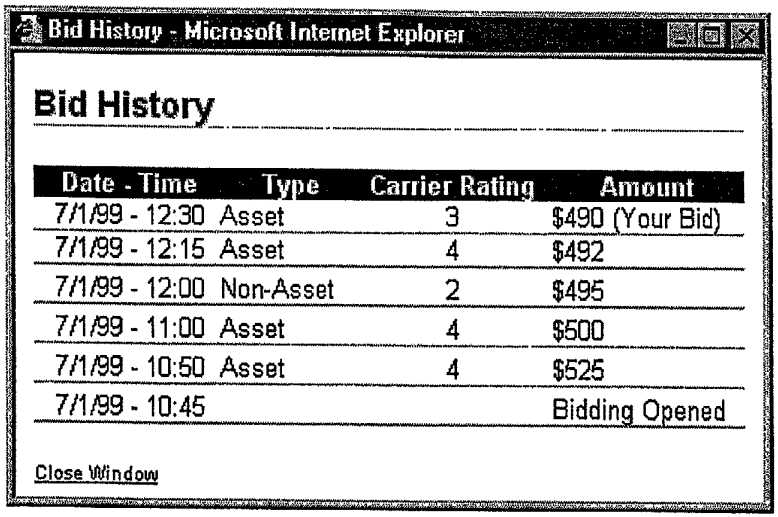

Bid History - Microsoft Internet Explorer
Bid History
Date - Time Type Carrier Rating Amount
7/1/99 - 12:30 Asset 3 $490 (Your Bid)
7/1/99 - 12:15 Asset 4 $492
7/1/99 - 12:00 Non-Asset 2 $495
7/1/99 - 11:00 Asset 4 $500
7/1/99 - 10:50 Asset 4 $525
7/1/99 - 10:45 Bidding Opened
Close Window

Fig. 11c (1106)

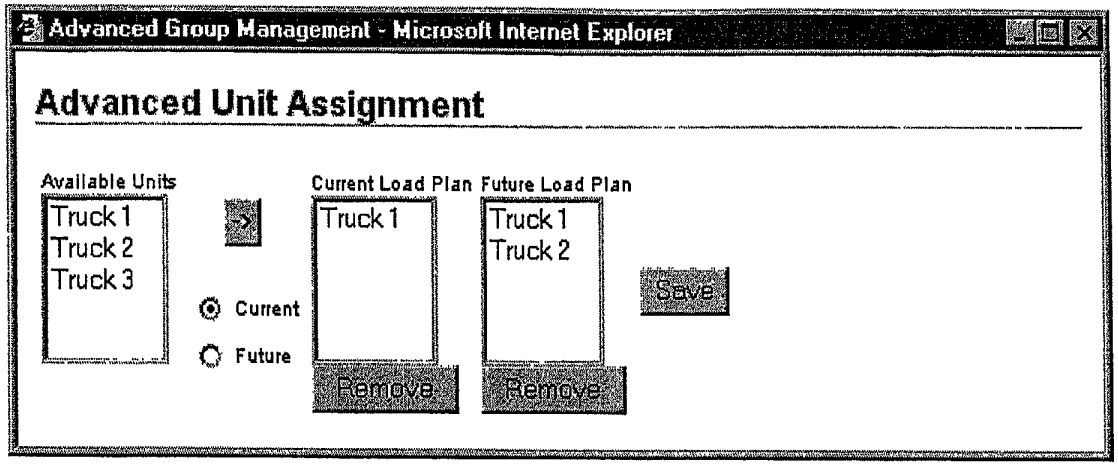

Advanced Group Management - Microsoft Internet Explorer
Advanced Unit Assignment
Available Units
Truck 1
Truck 2
Truck 3
>
Current
Future
Current Load Plan
Truck 1
Remove
Future Load Plan
Truck 1
Truck 2
Remove
Save

Fig. 11d (1108)

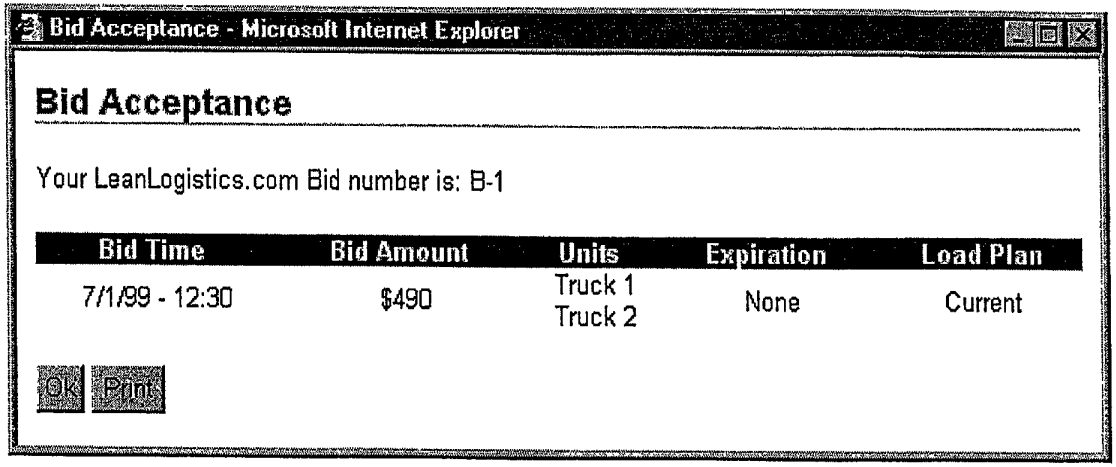
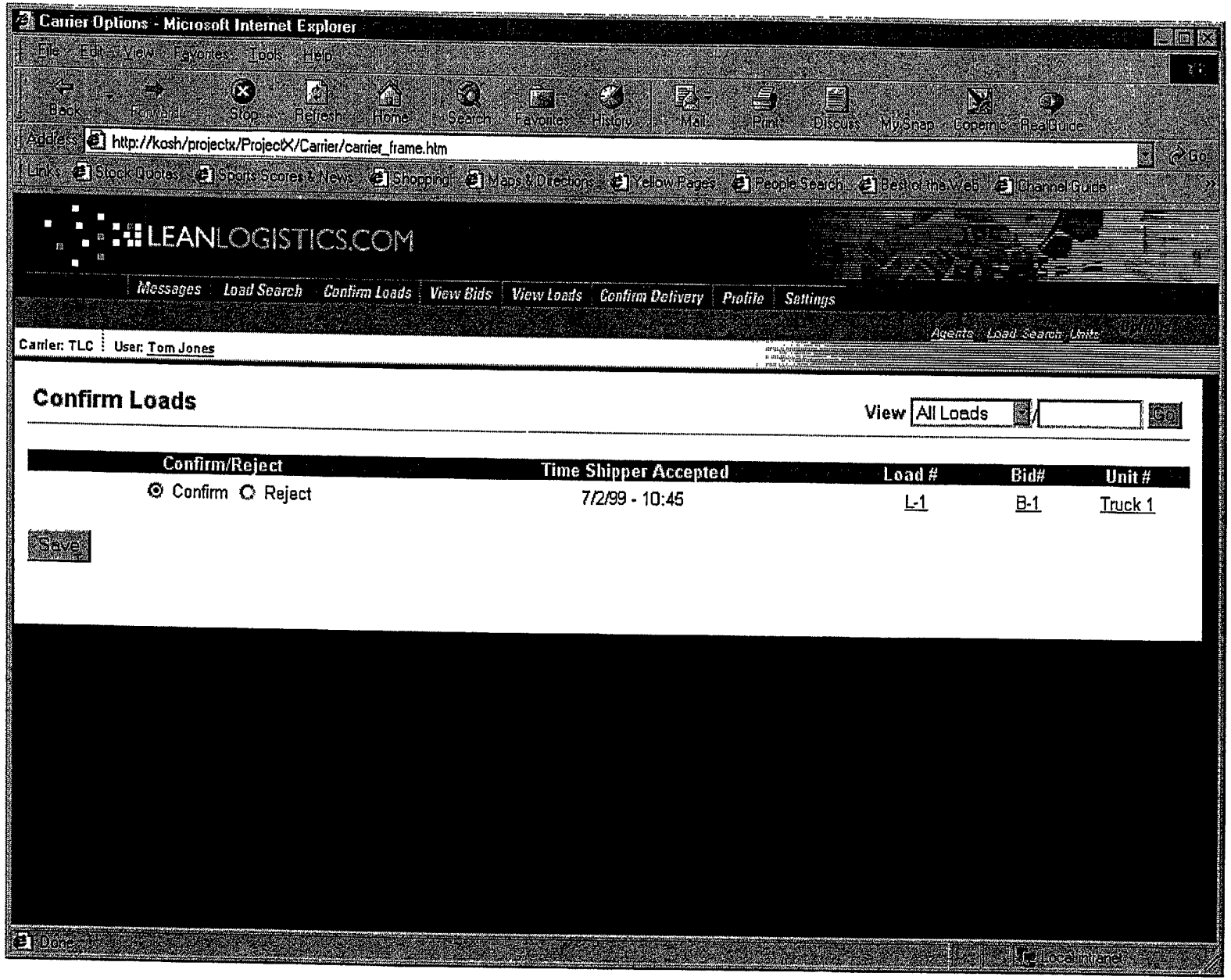

Bid Acceptance - Microsoft Internet Explorer
Bid Acceptance
Your LeanLogistics.com Bid number is: B-1
Bid Time
Bid Amount
Units
Expiration
Load Plan
7/1/99 - 12:30
$490
Truck 1
Truck 2
None
Current
Ok
Print

Fig. 11e (1110)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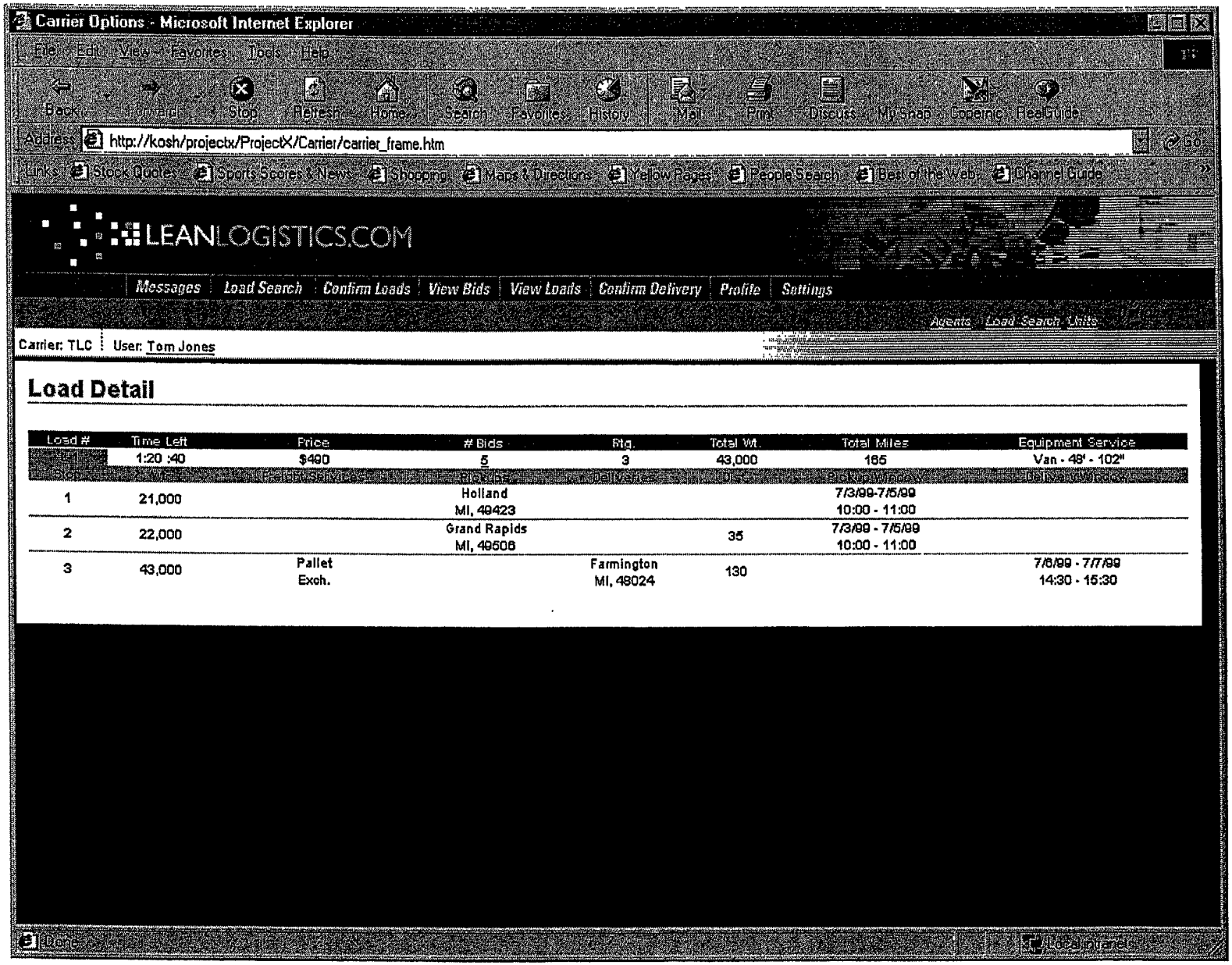
Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Confirm Loads
View All Loads Go
Confirm/Reject
Time Shipper Accepted
Load #
Bid#
Unit #
Confirm Reject
7/2/99 - 10:45
L-1
B-1
Truck 1
Save
Done
Local intranet

Fig. 12a (1202)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Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Load Detail
Load # Time Left Price # Bids Rtg. Total Wt. Total Miles Equipment Service
1:20 :40 $400 5 3 43,000 165 Van - 48' - 102"
Stop Wt. Pick Up Service Pick Up Delivery Dist. Pick Up Window Delivery Window
1 21,000 Holland MI, 49423 7/3/99-7/5/99 10:00 - 11:00
2 22,000 Grand Rapids MI, 49506 35 7/3/99 - 7/5/99 10:00 - 11:00
3 43,000 Pallet Exch. Farmington MI, 48024 130 7/6/99 - 7/7/99 14:30 - 15:30
Done Local intranet

Fig. 12b (1204)

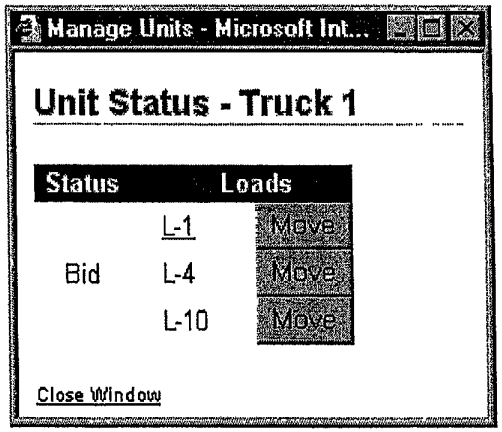
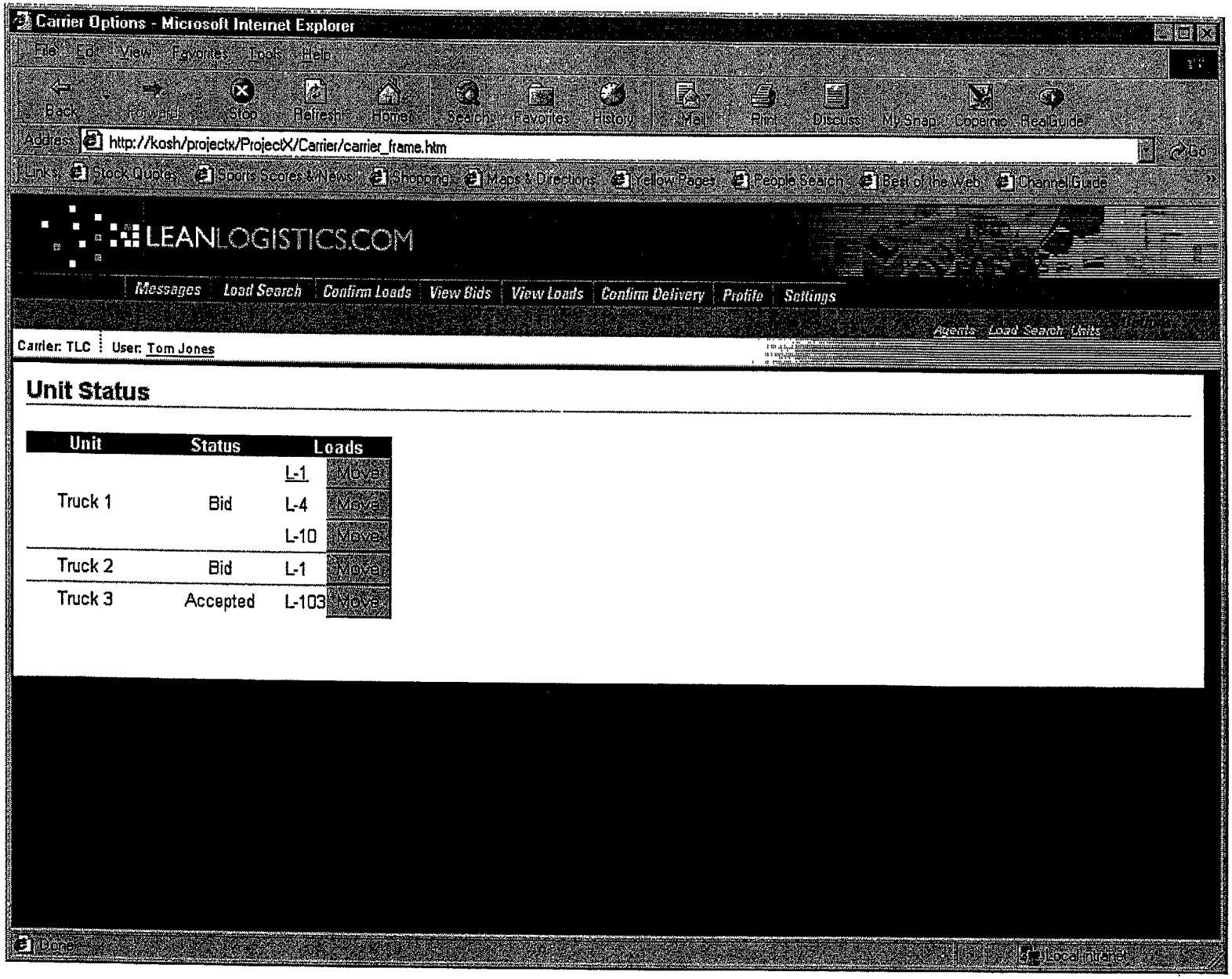

Manage Units - Microsoft Int...
Unit Status - Truck 1
Status
Loads
L-1
Move
Bid
L-4
Move
L-10
Move
Close Window

Fig. 12c (1206)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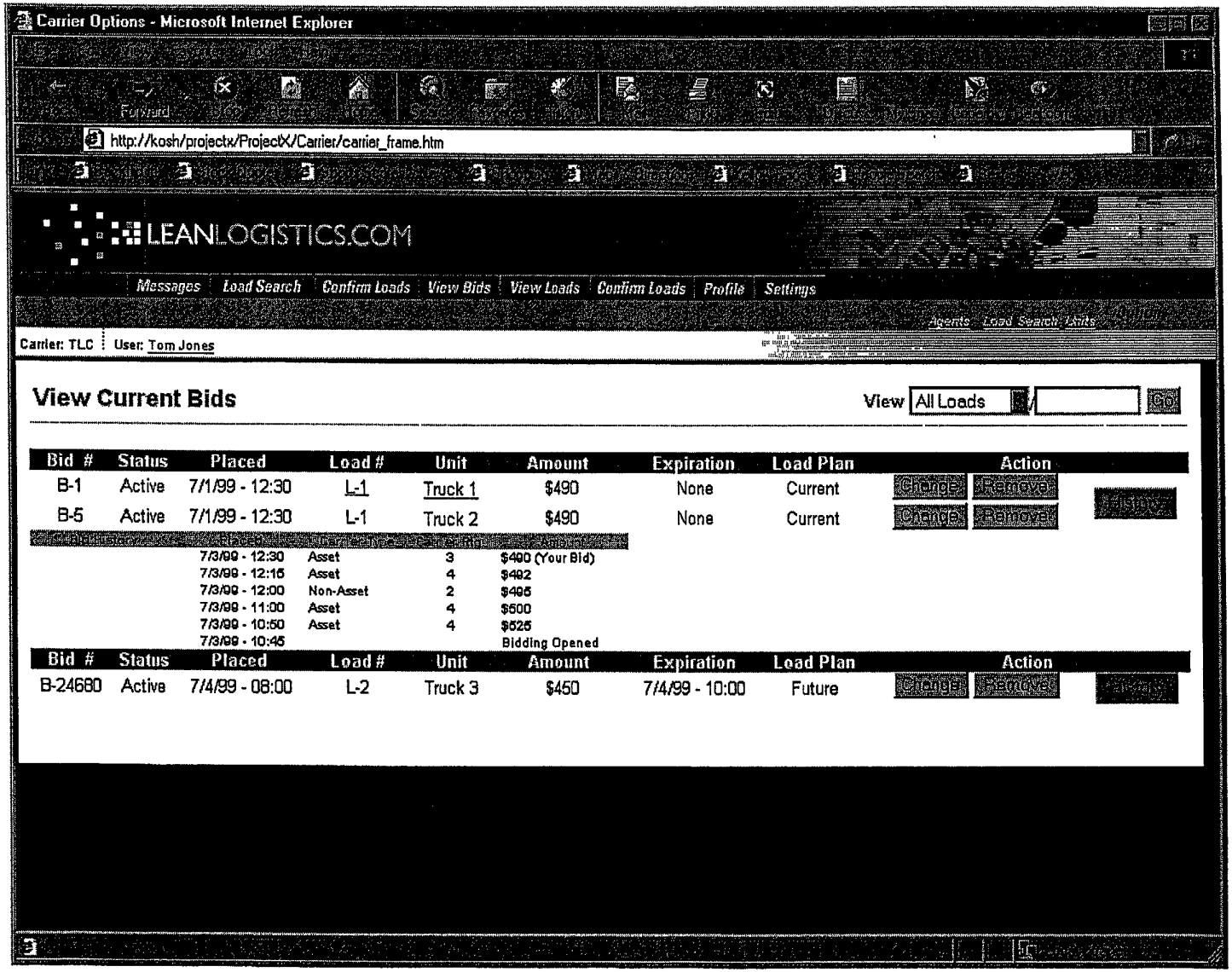
Agents Load Search Units
Carrier: TLC User: Tom Jones
Unit Status
Unit Status Loads
Truck 1 Bid L-1 Move
L-4 Move
L-10 Move
Truck 2 Bid L-1 Move
Truck 3 Accepted L-103 Move
Done
Local intranet

Fig. 12d (1208)


Carrier Options - Microsoft Internet Explorer
http://kosh/projectx/ProjectX/Carrier/carrier_frame.htm
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Messages
Load Search
Confirm Loads
View Bids
View Loads
Confirm Loads
Profile
Settings
Agents
Load Search Lists
Carrier: TLC
User: Tom Jones
View Current Bids
View
All Loads
Go
Bid #
Status
Placed
Load #
Unit
Amount
Expiration
Load Plan
Action
B-1
Active
7/1/99 - 12:30
L-1
Truck 1
$490
None
Current
Change
Remove
B-5
Active
7/1/99 - 12:30
L-1
Truck 2
$490
None
Current
Change
Remove
7/3/99 - 12:30
Asset
3
$490 (Your Bid)
7/3/99 - 12:15
Asset
4
$492
7/3/99 - 12:00
Non-Asset
2
$495
7/3/99 - 11:00
Asset
4
$500
7/3/99 - 10:50
Asset
4
$525
7/3/99 - 10:45
Bidding Opened
Bid #
Status
Placed
Load #
Unit
Amount
Expiration
Load Plan
Action
B-24680
Active
7/4/99 - 08:00
L-2
Truck 3
$450
7/4/99 - 10:00
Future
Change
Remove

Fig. 13 (1302)

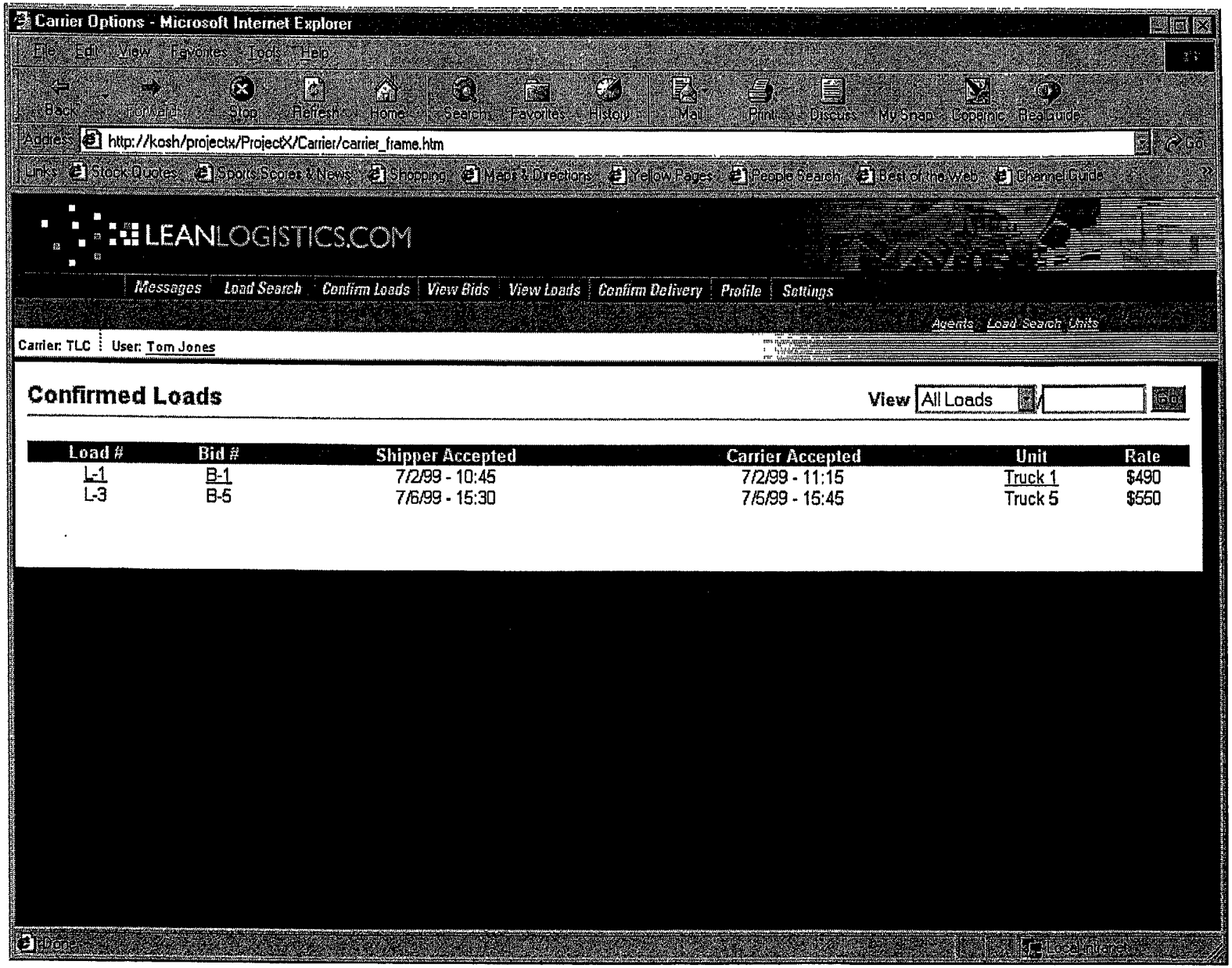
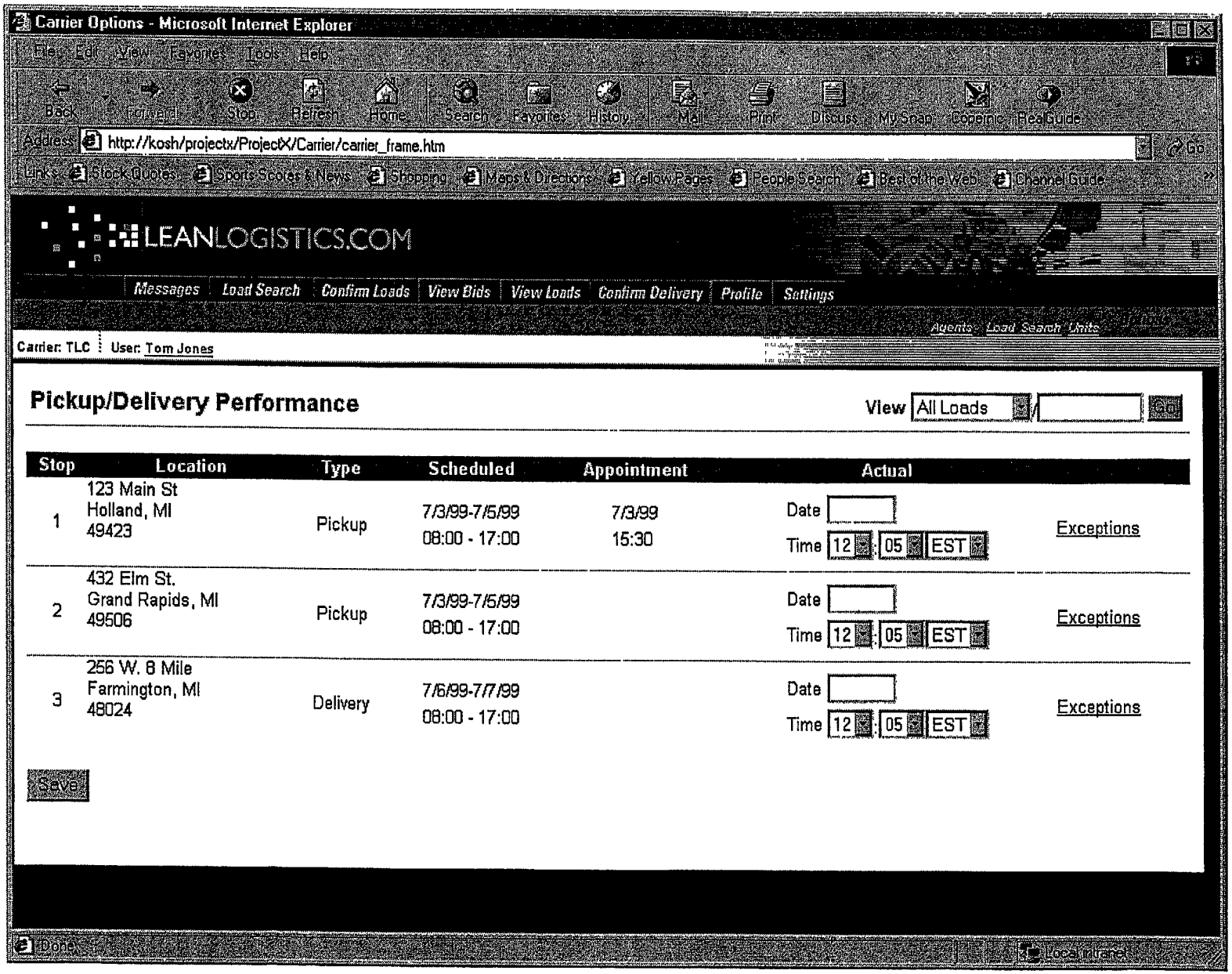


Fig. 14a (1402)

09482154 . 011200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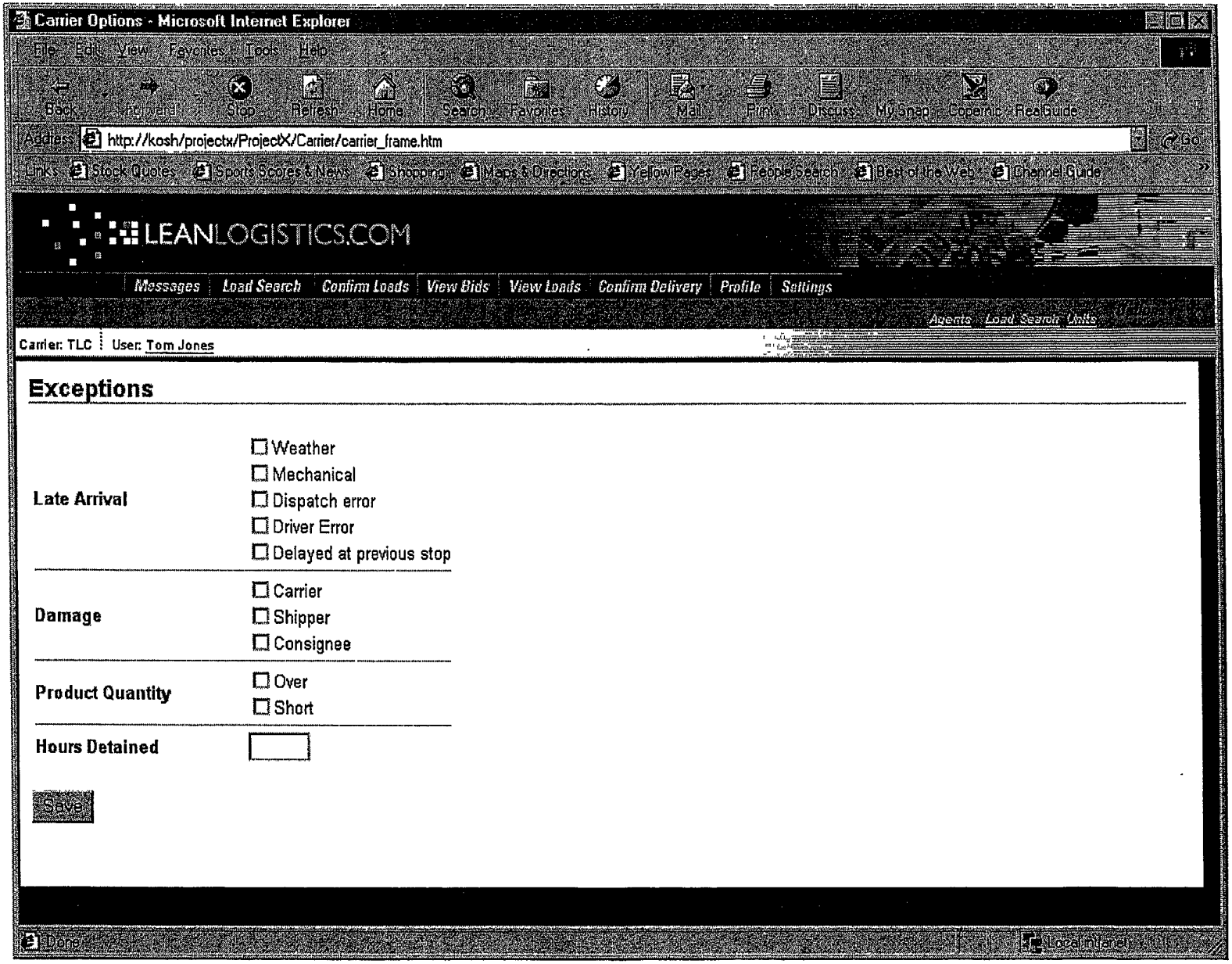
Agents Load Search Units
Carrier: TLC User: Tom Jones
Pickup/Delivery Performance
View All Loads Go
Stop Location Type Scheduled Appointment Actual
1 123 Main St Holland, MI 49423 Pickup 7/3/99-7/5/99 08:00 - 17:00 7/3/99 15:30 Date Time 12 : 05 EST Exceptions
2 432 Elm St. Grand Rapids, MI 49506 Pickup 7/3/99-7/5/99 08:00 - 17:00 Date Time 12 : 05 EST Exceptions
3 256 W. 8 Mile Farmington, MI 48024 Delivery 7/6/99-7/7/99 08:00 - 17:00 Date Time 12 : 05 EST Exceptions
Save
Done
Local intranet

Fig. 14b (1404)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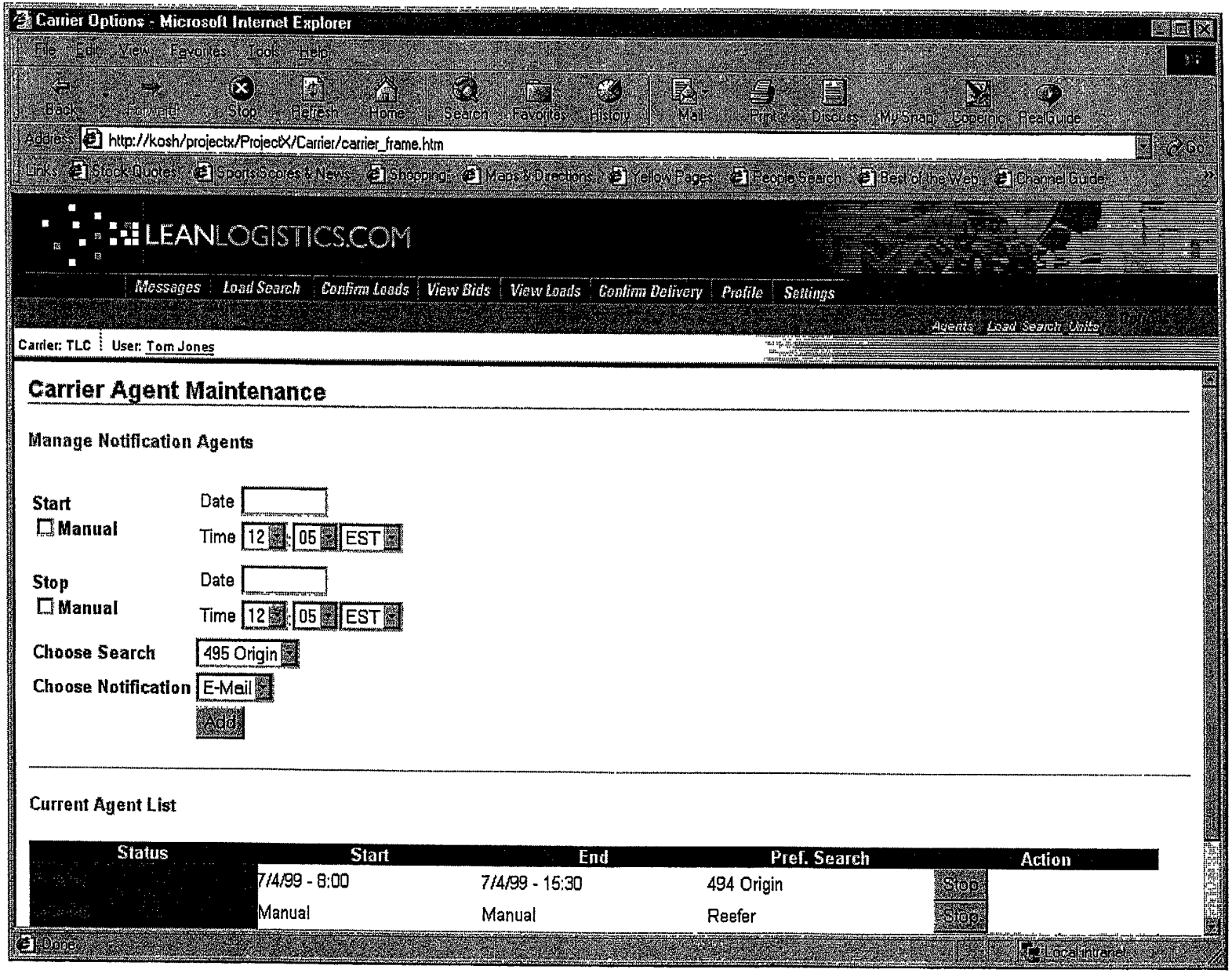
Agents Load Search Units
Carrier: TLC User: Tom Jones
Exceptions
Late Arrival
Weather
Mechanical
Dispatch error
Driver Error
Delayed at previous stop
Damage
Carrier
Shipper
Consignee
Product Quantity
Over
Short
Hours Detained
Save
Done
Local intranet

Fig. 14c (1406)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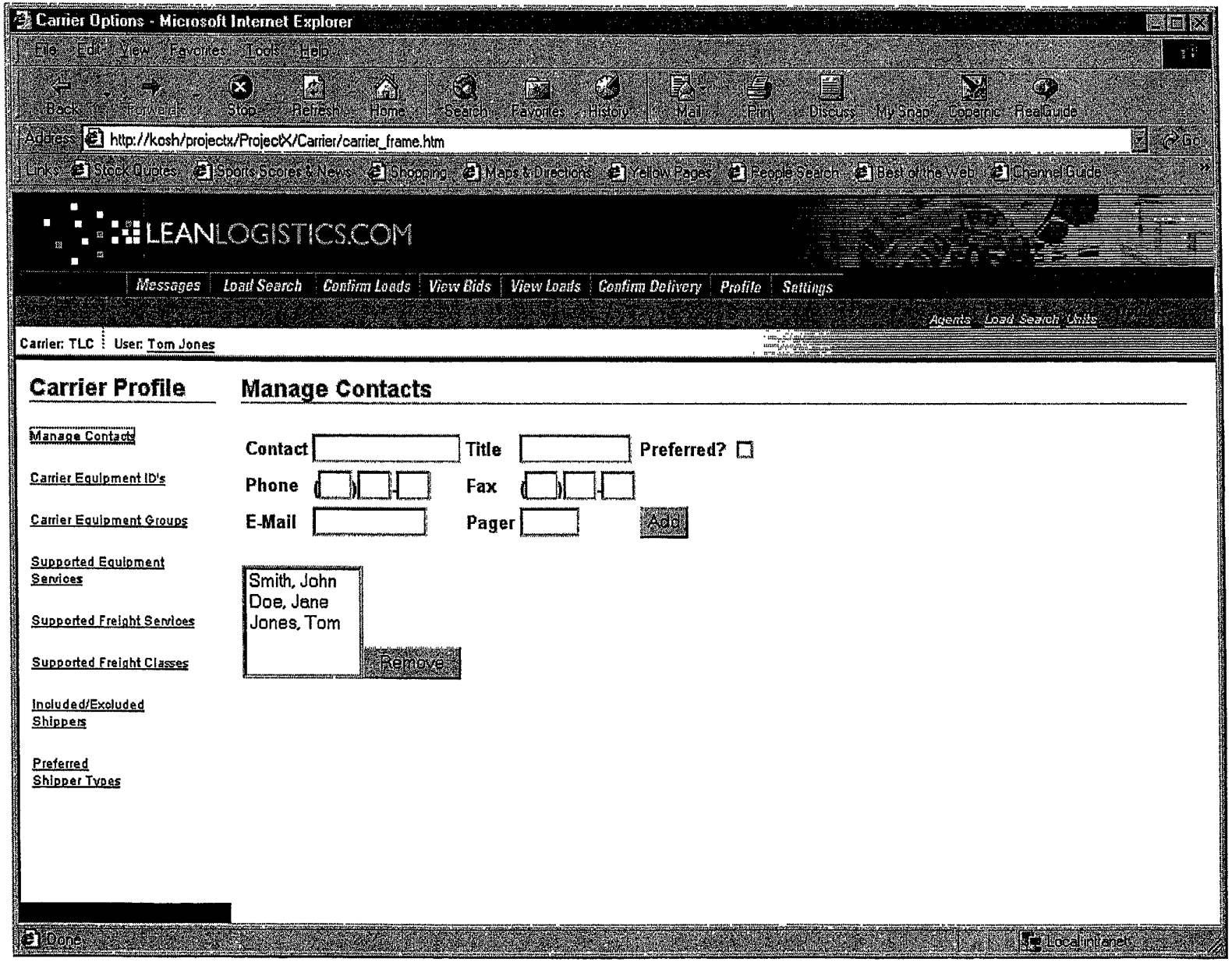
Agents Load Search Units
Carrier: TLC User: Tom Jones
Carrier Agent Maintenance
Manage Notification Agents
Start
Manual
Date
Time 12 : 05 EST
Stop
Manual
Date
Time 12 : 05 EST
Choose Search
495 Origin
Choose Notification
E-Mail
Add
Current Agent List
Status
Start
End
Pref. Search
Action
7/4/99 - 8:00
7/4/99 - 15:30
494 Origin
Stop
Manual
Manual
Reefer
Stop
Done
Local intranet

Fig. 15 (1502)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Carrier: TLC User: Tom Jones
Carrier Profile
Manage Contacts
Carrier Equipment ID's
Carrier Equipment Groups
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Shippers
Preferred Shipper Types
Manage Contacts
Contact
Title
Preferred?
Phone
Fax
E-Mail
Pager
Add
Smith, John
Doe, Jane
Jones, Tom
Remove
Done
Local intranet

Fig. 16a (1602)

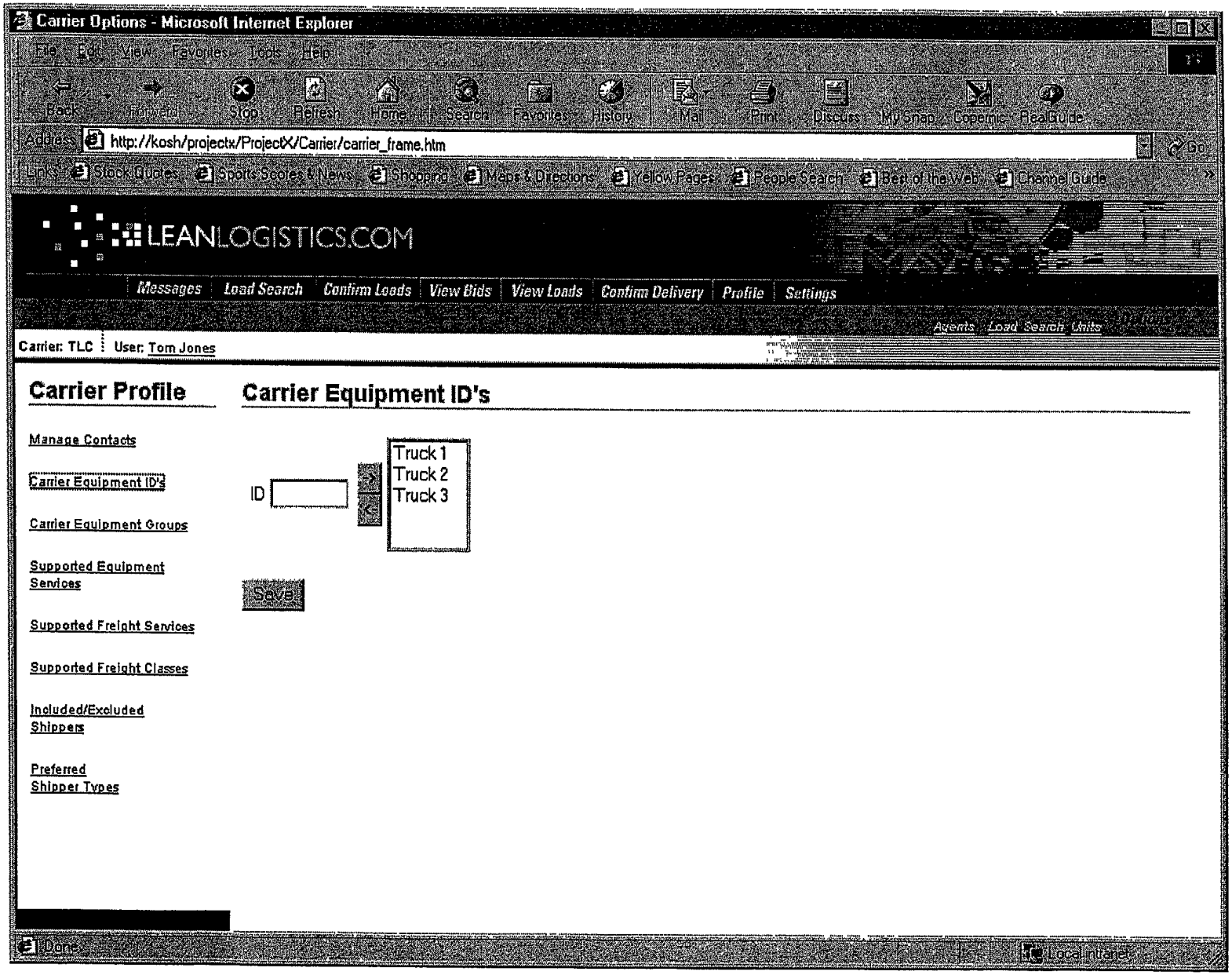
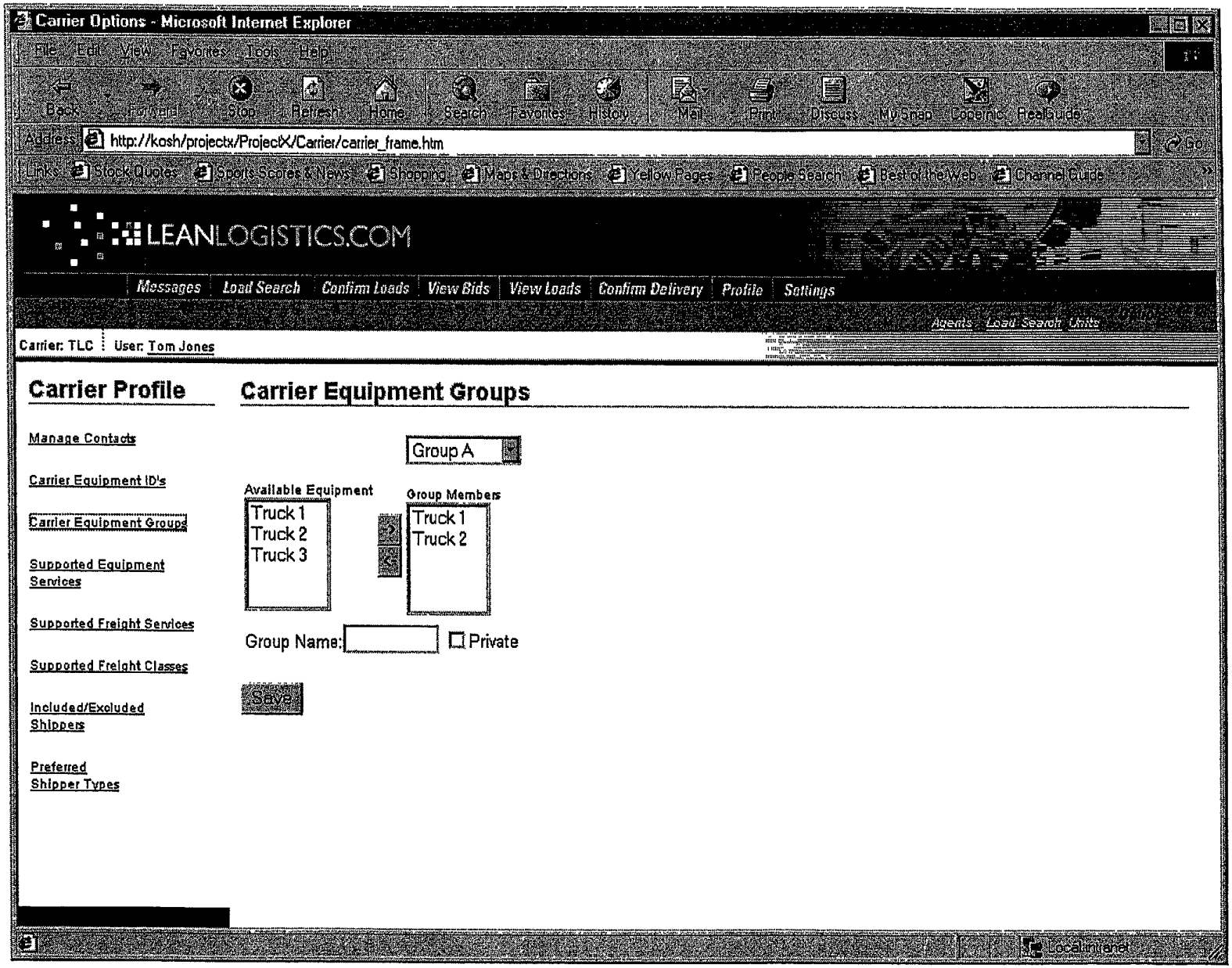


Fig. 16b (1604)

09482154 .011200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Agents Load Search Units
Carrier: TLC User: Tom Jones
Carrier Profile
Manage Contacts
Carrier Equipment ID's
Carrier Equipment Groups
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Shippers
Preferred Shipper Types
Carrier Equipment Groups
Group A
Available Equipment
Truck 1
Truck 2
Truck 3
Group Members
Truck 1
Truck 2
Group Name:
Private
Save
Local intranet

Fig. 16c (1606)

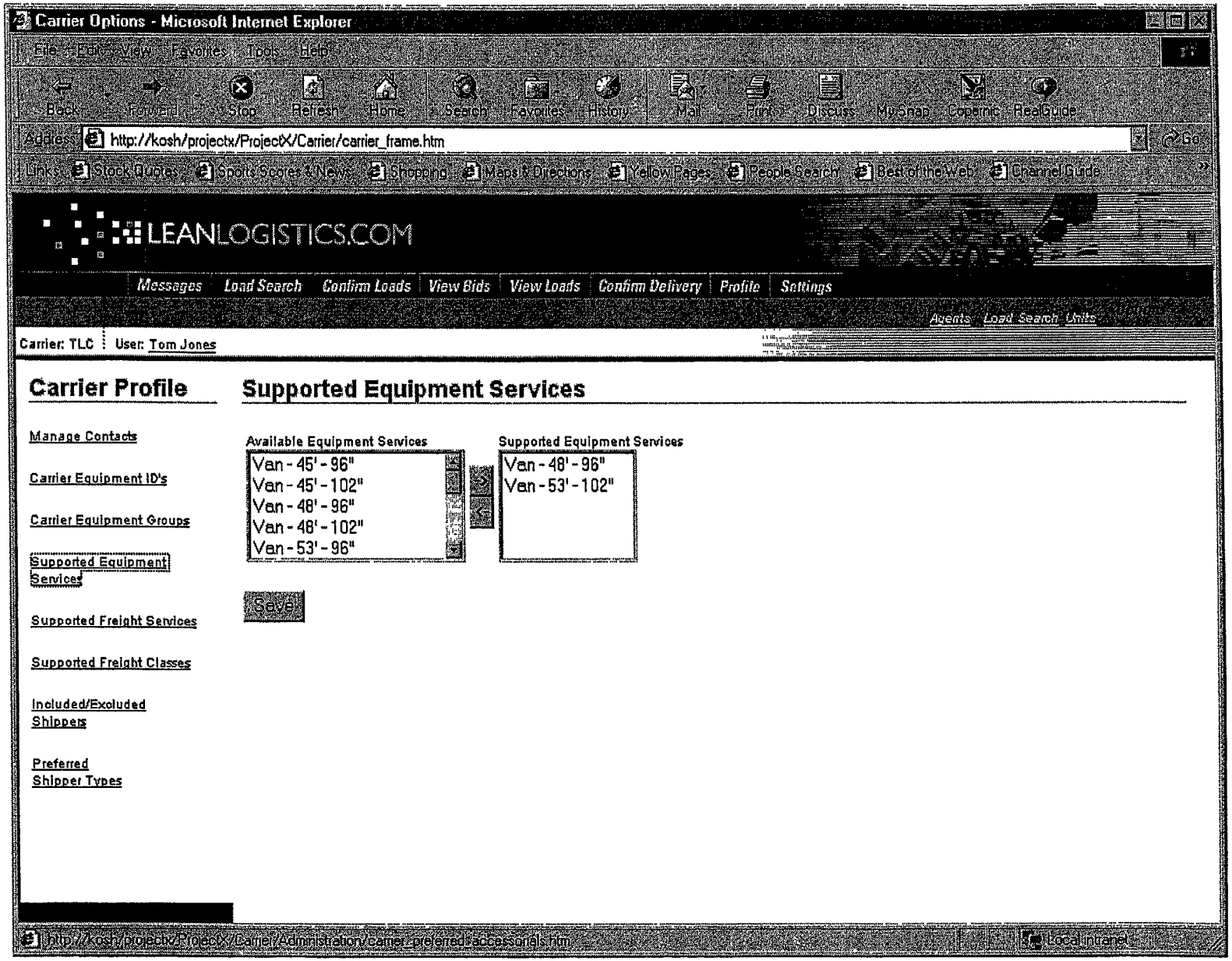
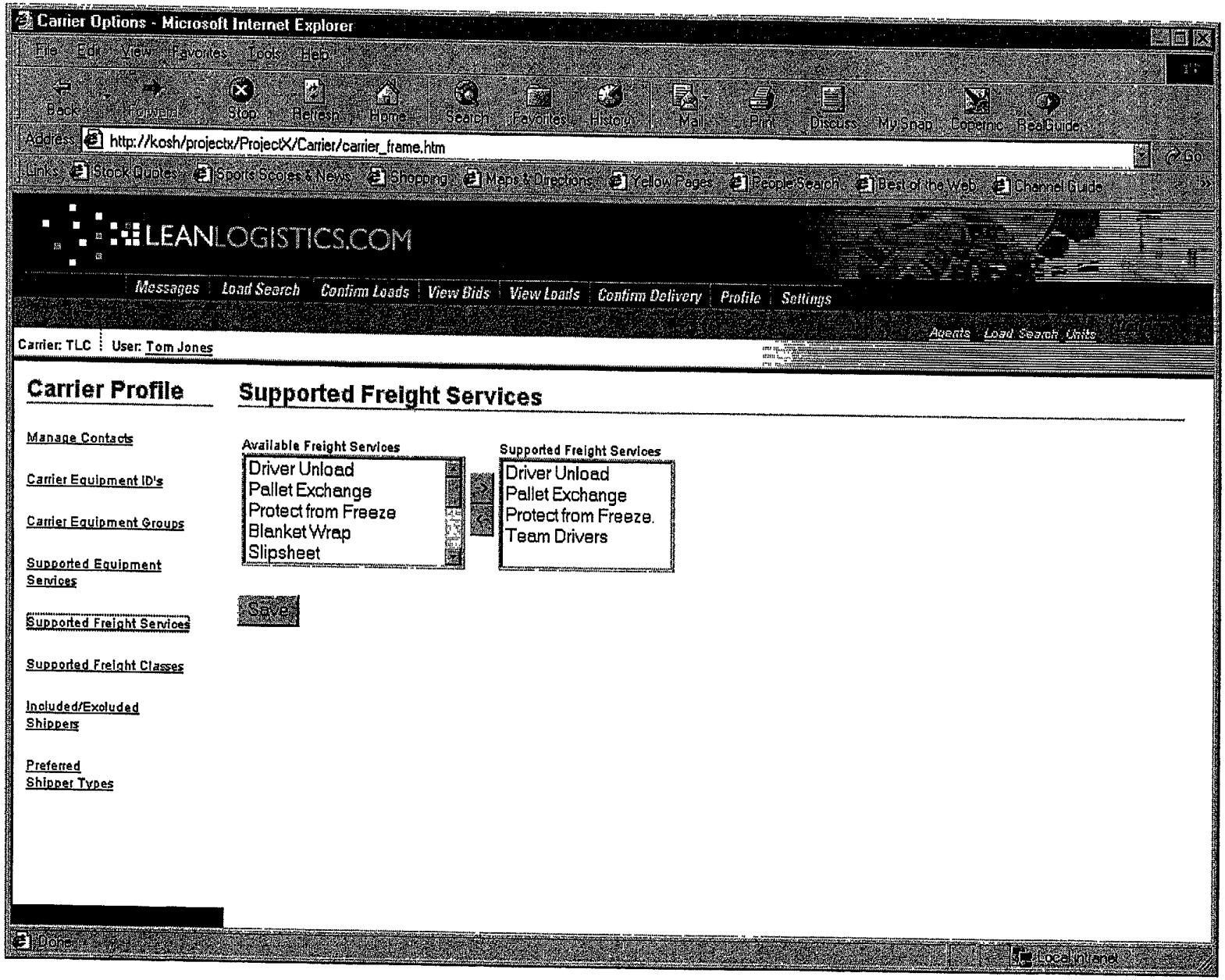


Fig. 16d (1608)

09482154 .011200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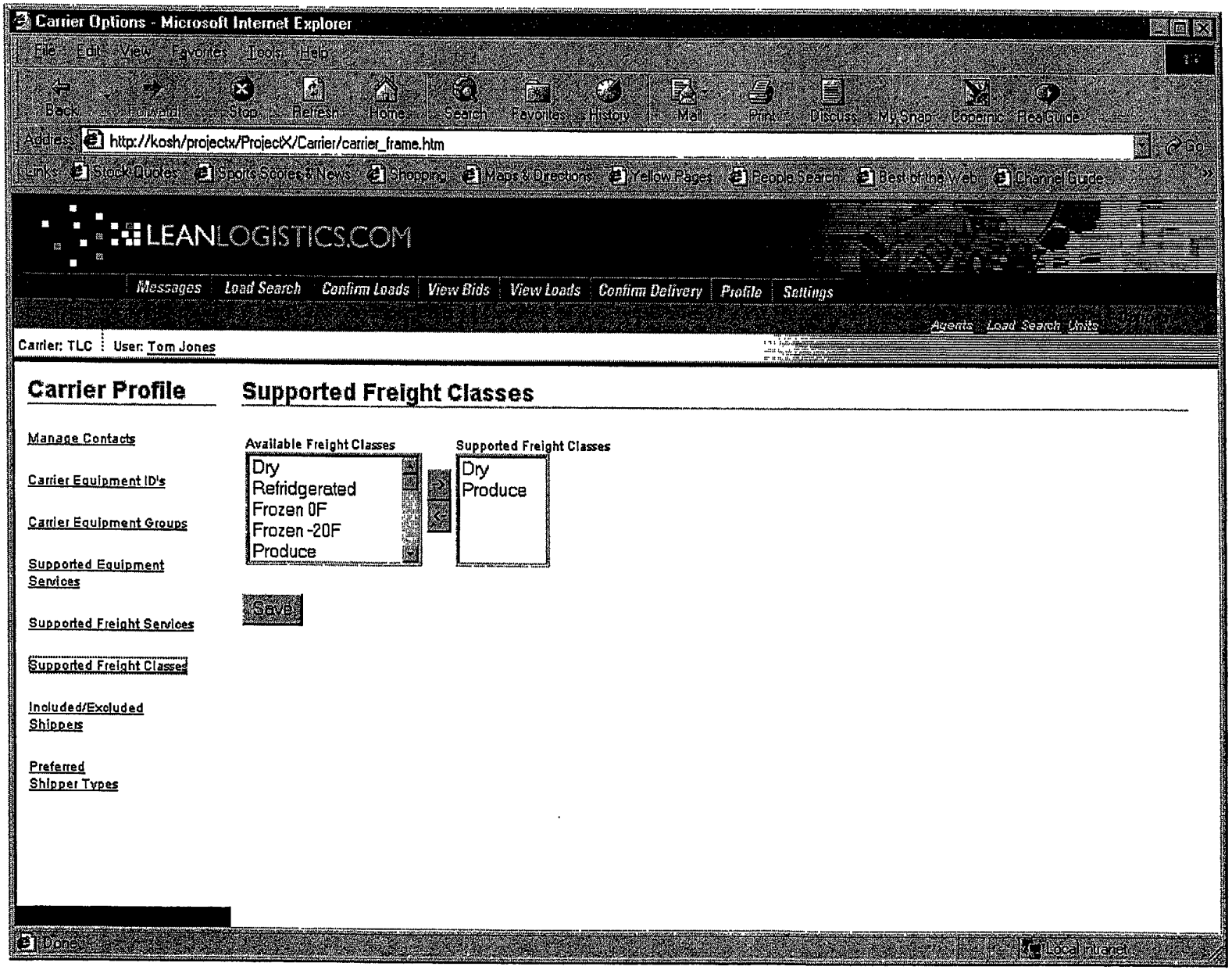
Agents Load Search Units
Carrier: TLC User: Tom Jones
Carrier Profile
Manage Contacts
Carrier Equipment ID's
Carrier Equipment Groups
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Shippers
Preferred Shipper Types
Supported Freight Services
Available Freight Services
Driver Unload
Pallet Exchange
Protect from Freeze
Blanket Wrap
Slipsheet
Supported Freight Services
Driver Unload
Pallet Exchange
Protect from Freeze.
Team Drivers
Save
Done
Local intranet

Fig. 16e (1610)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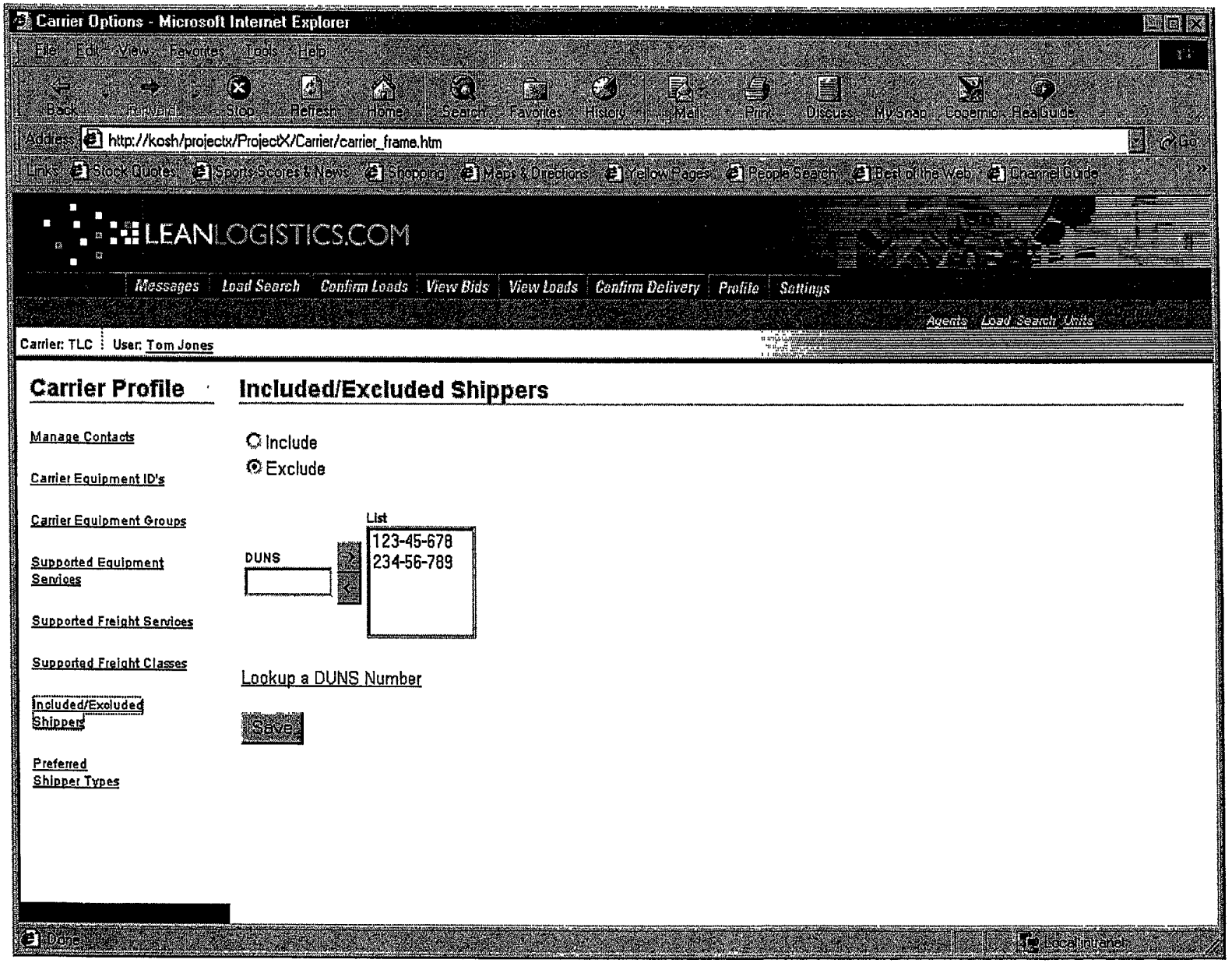
Carrier: TLC User: Tom Jones
Carrier Profile
Manage Contacts
Carrier Equipment ID's
Carrier Equipment Groups
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Shippers
Preferred Shipper Types
Supported Freight Classes
Available Freight Classes
Dry
Refridgerated
Frozen 0F
Frozen -20F
Produce
Supported Freight Classes
Dry
Produce
Save
Done
Local intranet

Fig. 16f (1612)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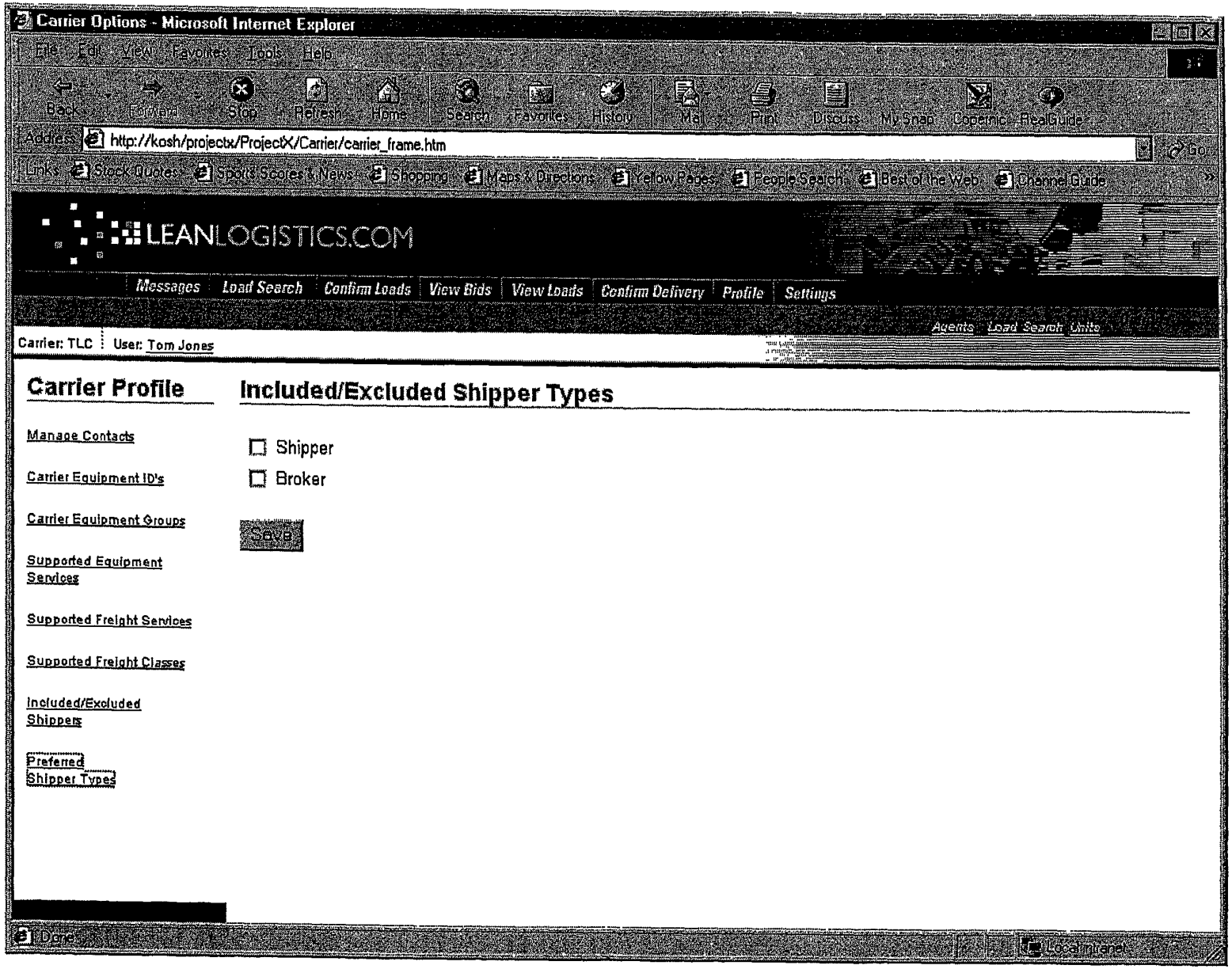
Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Carrier Profile
Manage Contacts
Carrier Equipment ID's
Carrier Equipment Groups
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Shippers
Preferred Shipper Types
Included/Excluded Shippers
Include
Exclude
List
123-45-678
234-56-789
DUNS
Lookup a DUNS Number
Save
Done
Local intranet

Fig. 16g (1614)


Carrier Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss My Snap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Carrier/carrier_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
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Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Carrier Profile
Manage Contacts
Carrier Equipment ID's
Carrier Equipment Groups
Supported Equipment Services
Supported Freight Services
Supported Freight Classes
Included/Excluded Shippers
Preferred Shipper Types
Included/Excluded Shipper Types
Shipper
Broker
Save
Done
Local intranet

Fig. 16h (1616)

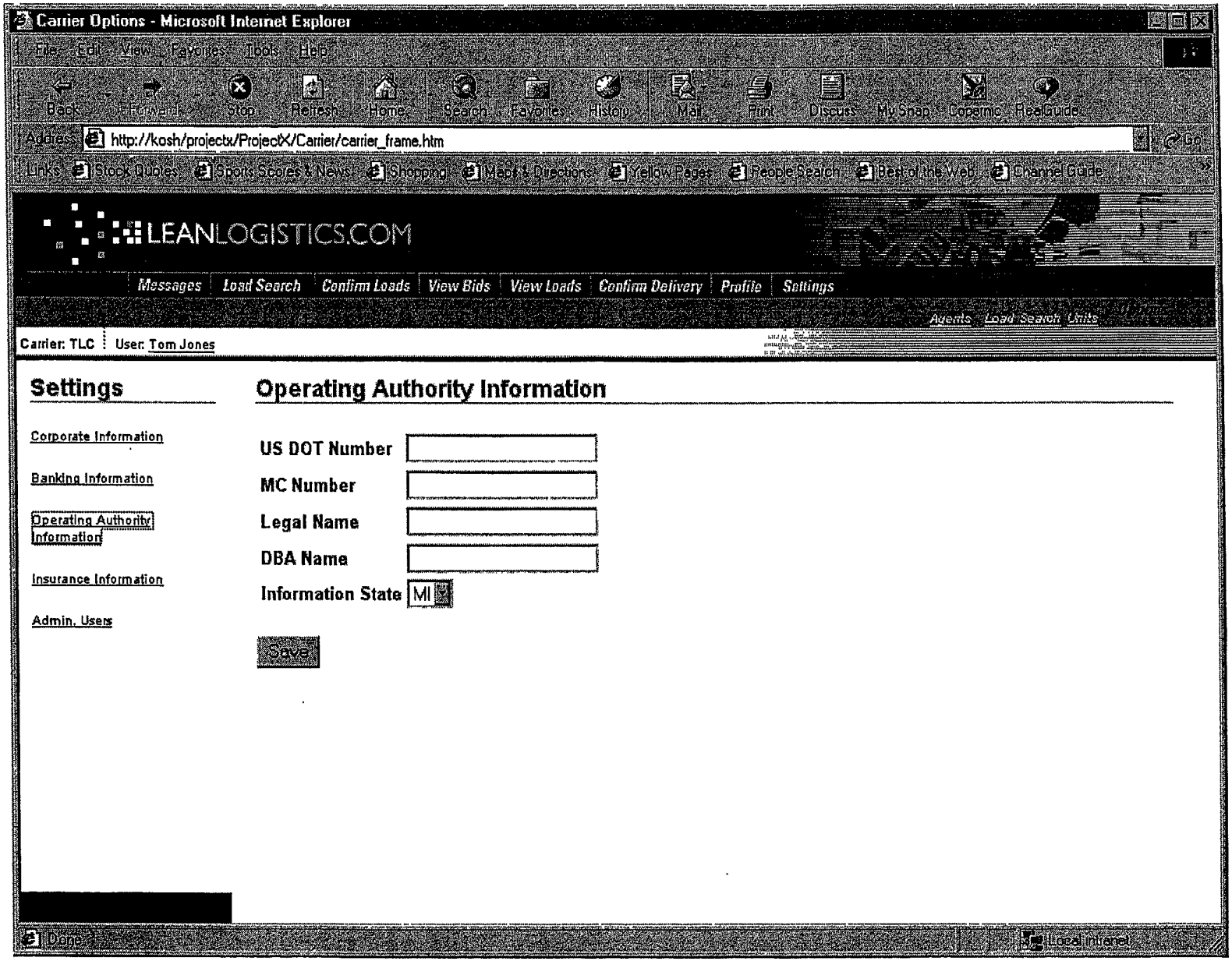
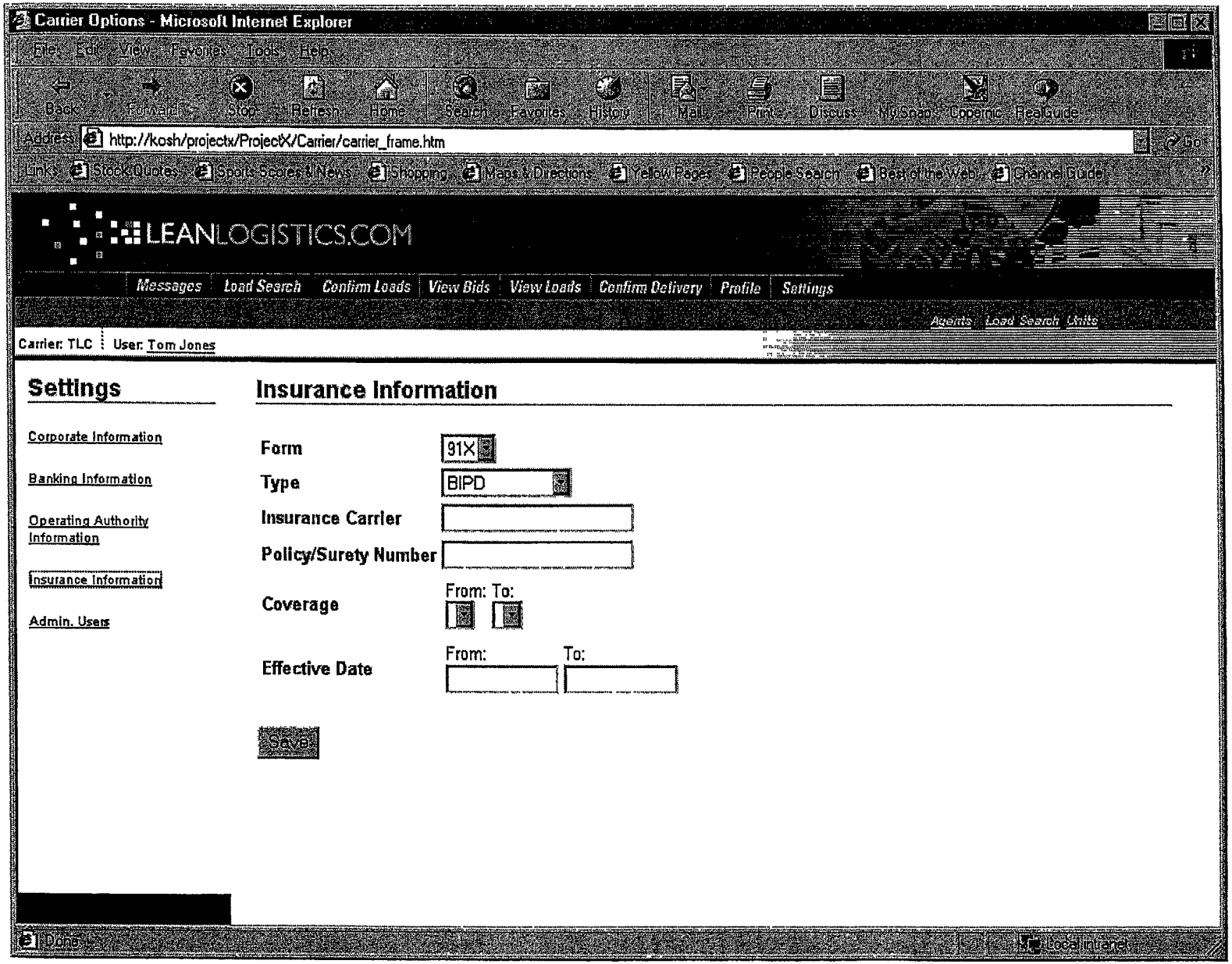

Carrier Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss My Snap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Carrier/carrier_frame.htm
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Settings
Corporate Information
Banking Information
Operating Authority Information
Insurance Information
Admin. Users
Operating Authority Information
US DOT Number
MC Number
Legal Name
DBA Name
Information State MI
Save
Done
Local intranet

Fig. 17a (1702)


Carrier Options - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Discuss MySnap Copernic RealGuide
Address http://kosh/projectx/ProjectX/Carrier/carrier_frame.htm
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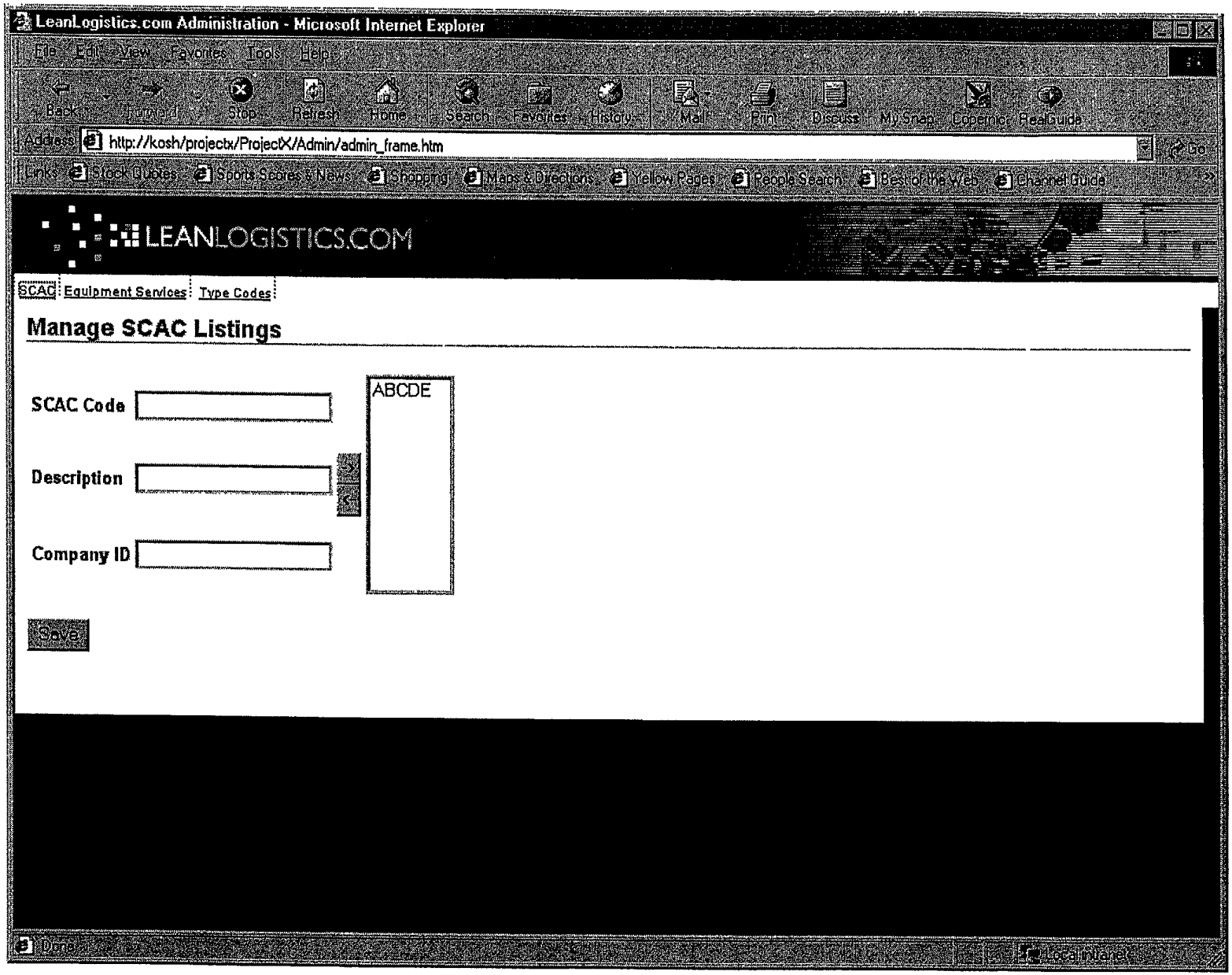
Messages Load Search Confirm Loads View Bids View Loads Confirm Delivery Profile Settings
Agents Load Search Units
Carrier: TLC User: Tom Jones
Settings
Corporate Information
Banking Information
Operating Authority Information
Insurance Information
Admin. Users
Insurance Information
Form 91X
Type BIPD
Insurance Carrier
Policy/Surety Number
Coverage From: To:
Effective Date From: To:
Save
Done
Local intranet

Fig. 17b (1704)


LeanLogistics.com Administration - Microsoft Internet Explorer
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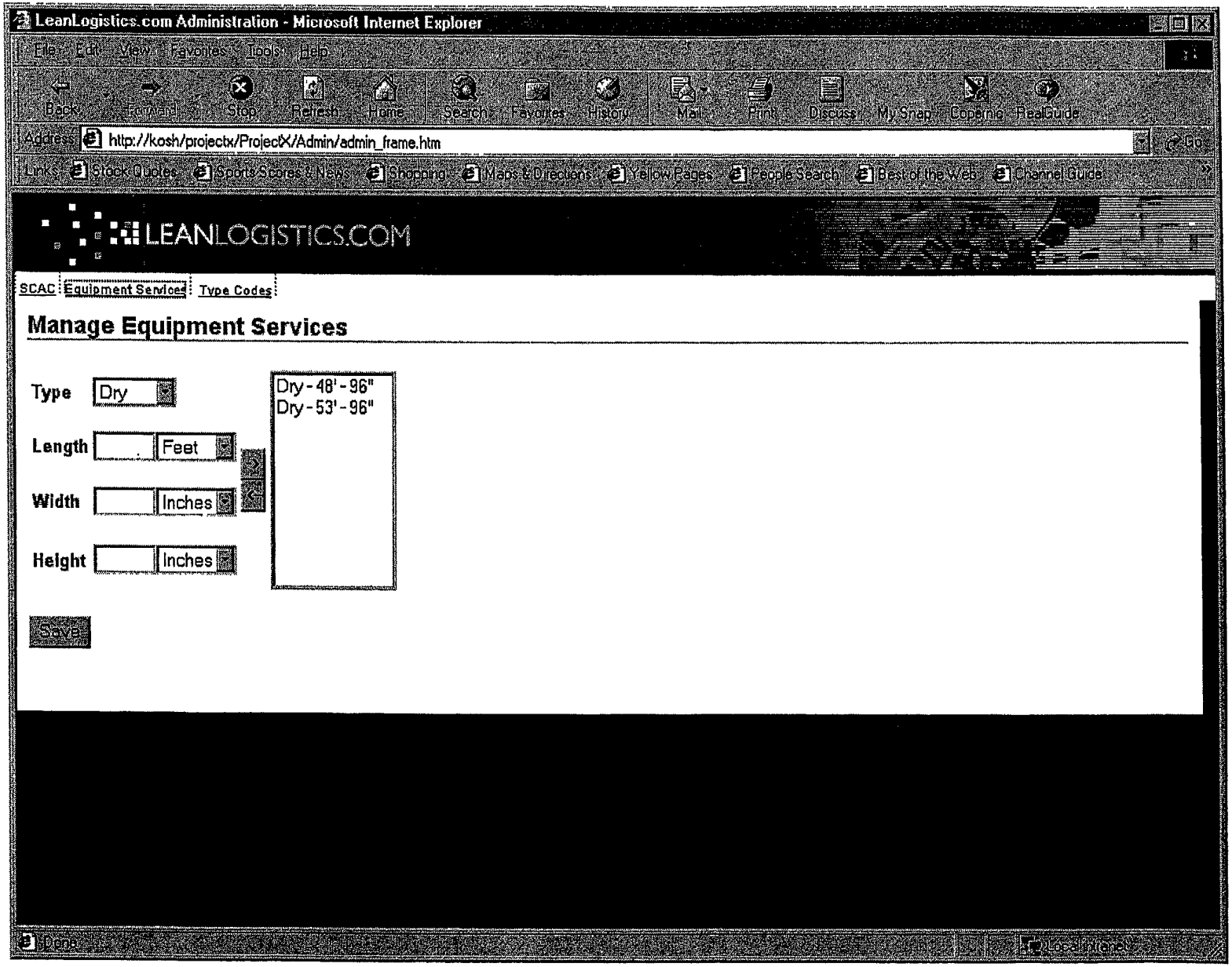
Address http://kosh/projectx/ProjectX/Admin/admin_frame.htm
Go
Links Stock Quotes Sports Scores & News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
SCAC Equipment Services Type Codes
Manage SCAC Listings
SCAC Code
Description
Company ID
ABCDE
Save
Done
Local intranet

Fig. 18a (1802)


LeanLogistics.com Administration - Microsoft Internet Explorer
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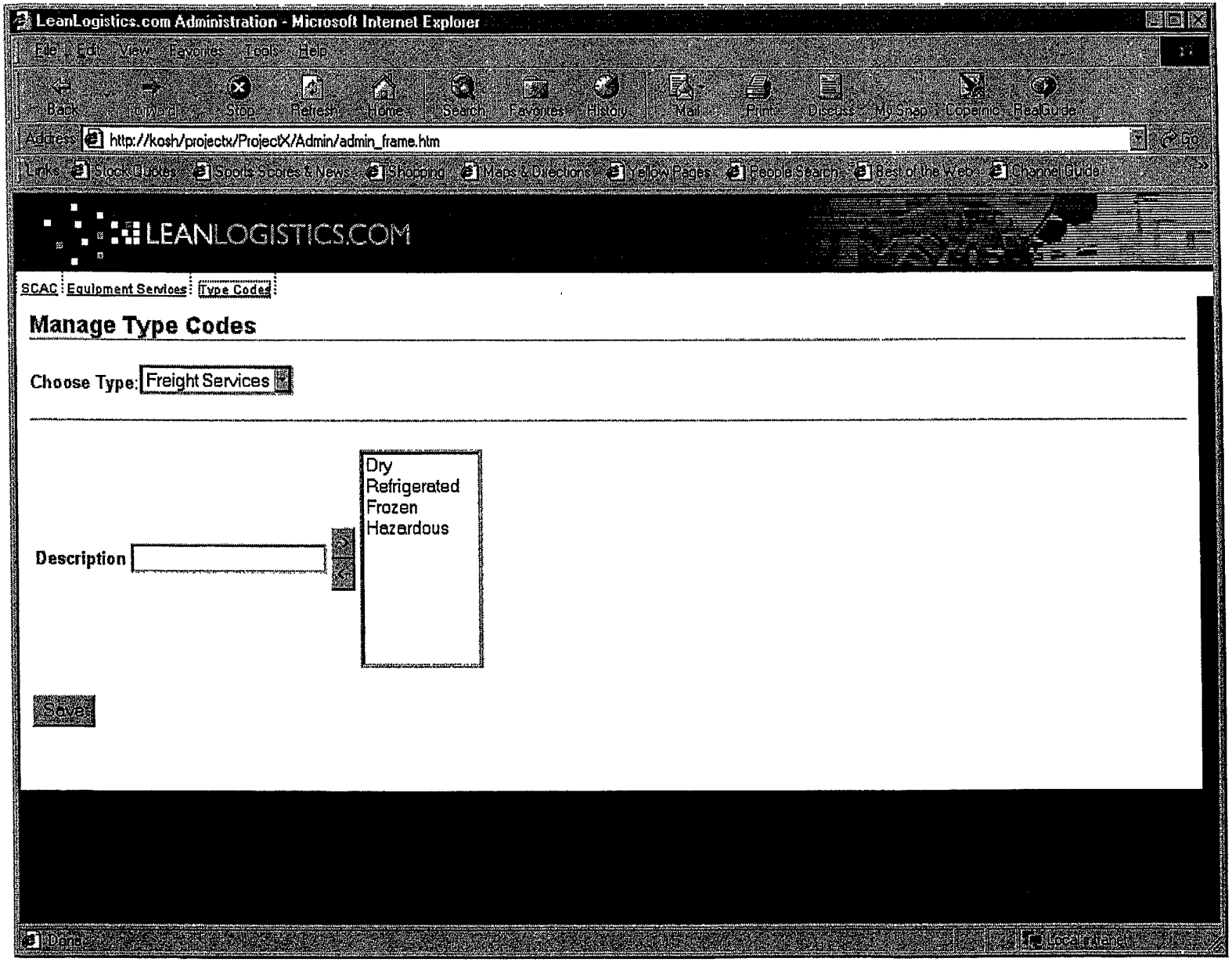
Address http://kosh/projectx/ProjectX/Admin/admin_frame.htm
Links Stock Quotes Sports Scores News Shopping Maps & Directions Yellow Pages People Search Best of the Web Channel Guide
LEANLOGISTICS.COM
SCAC Equipment Services Type Codes
Manage Equipment Services
Type Dry
Length Feet
Width Inches
Height Inches
Dry - 48' - 96"
Dry - 53' - 96"
Save
Done
Local intranet

Fig. 18b (1804)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LEANLOGISTICS.COM
SCAC Equipment Services Type Codes
Manage Type Codes
Choose Type: Freight Services
Dry
Refrigerated
Frozen
Hazardous
Description
Save
Done

Fig. 18c (1806)

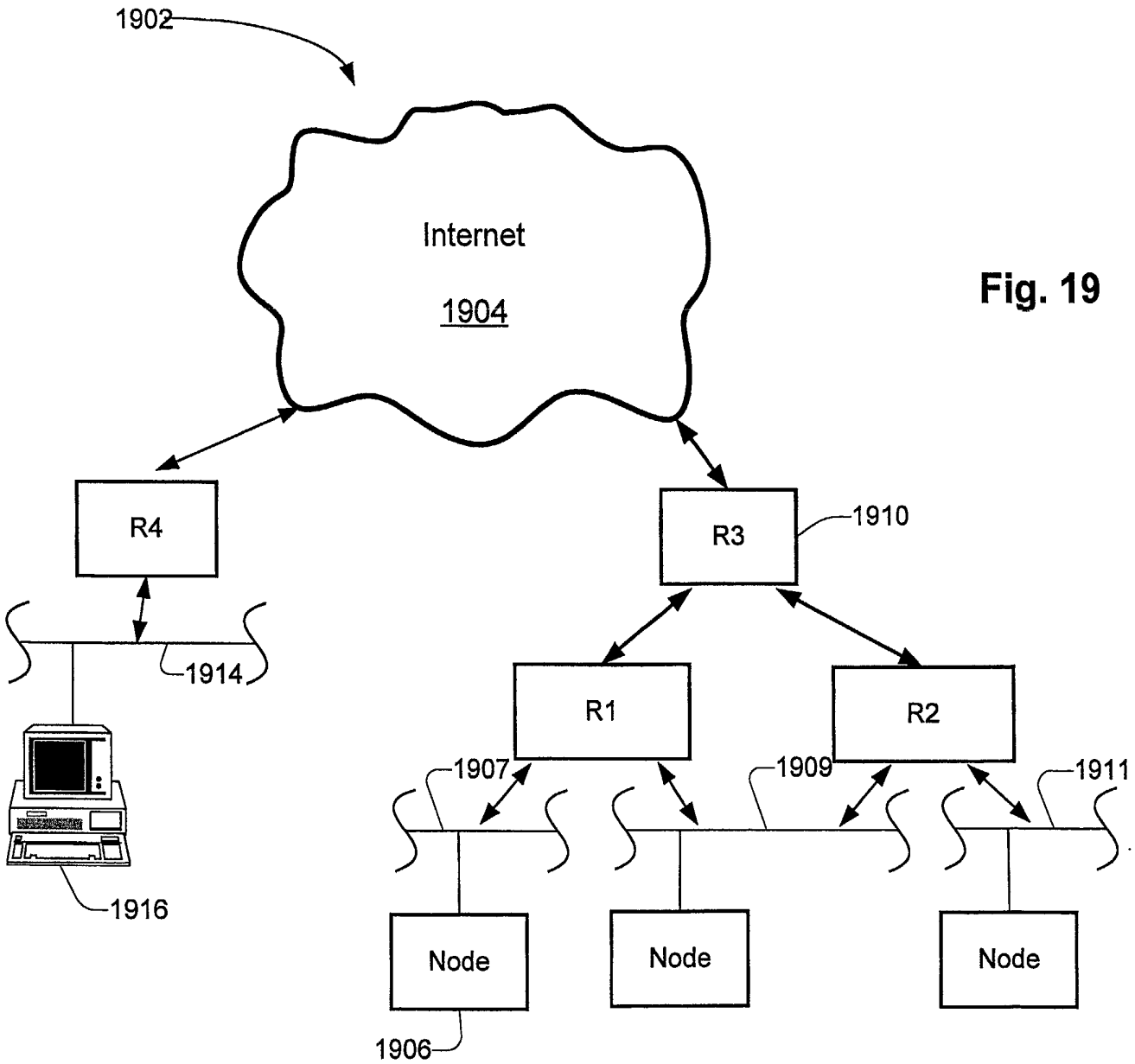

Fig. 19

09482154.011200

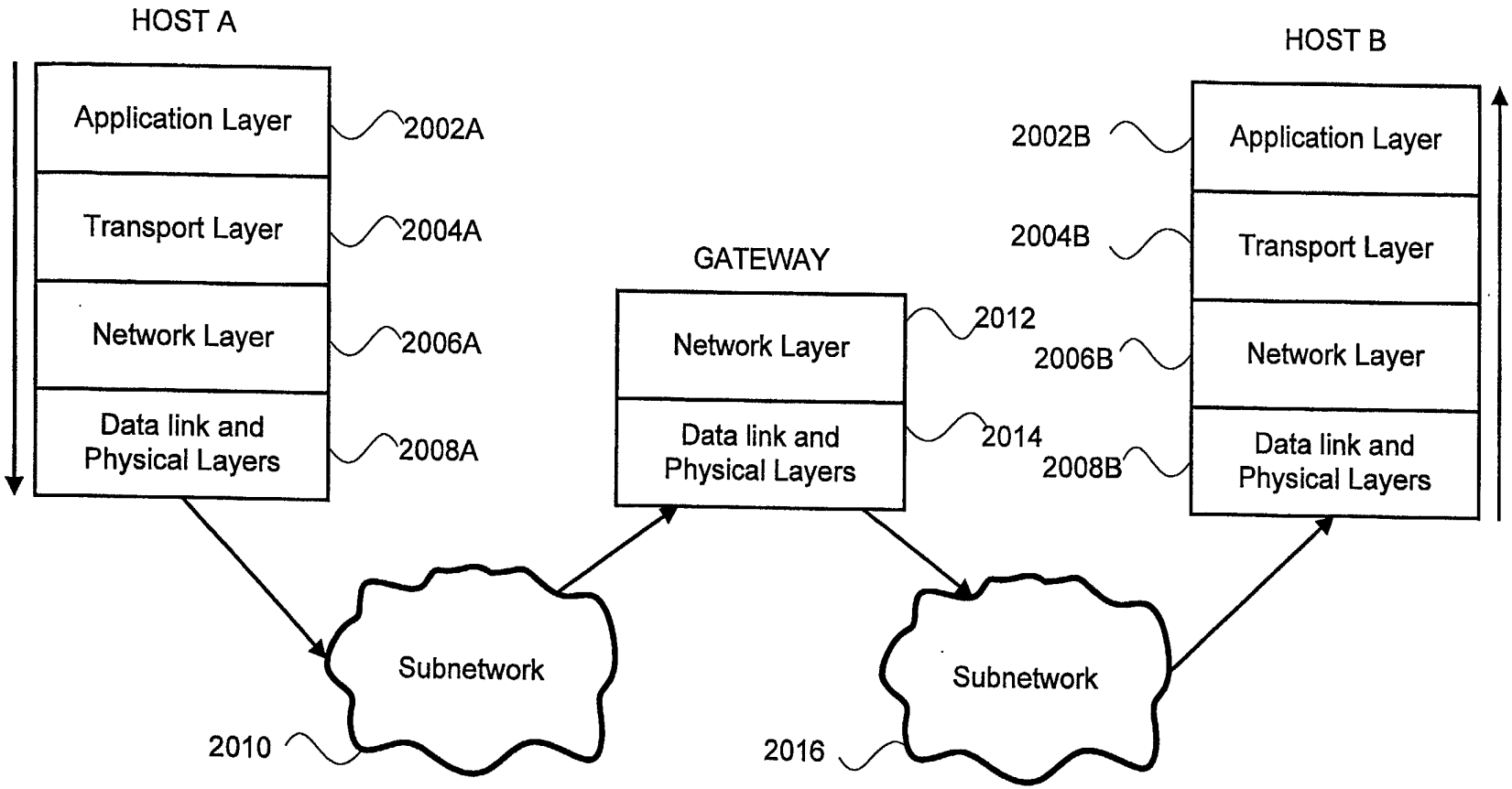
HOST A
Application Layer
2002A
Transport Layer
2004A
Network Layer
2006A
Data link and Physical Layers
2008A
GATEWAY
Network Layer
2012
Data link and Physical Layers
2014
HOST B
2002B
Application Layer
2004B
Transport Layer
2006B
Network Layer
2008B
Data link and Physical Layers
Subnetwork
2010
Subnetwork
2016

Fig. 20

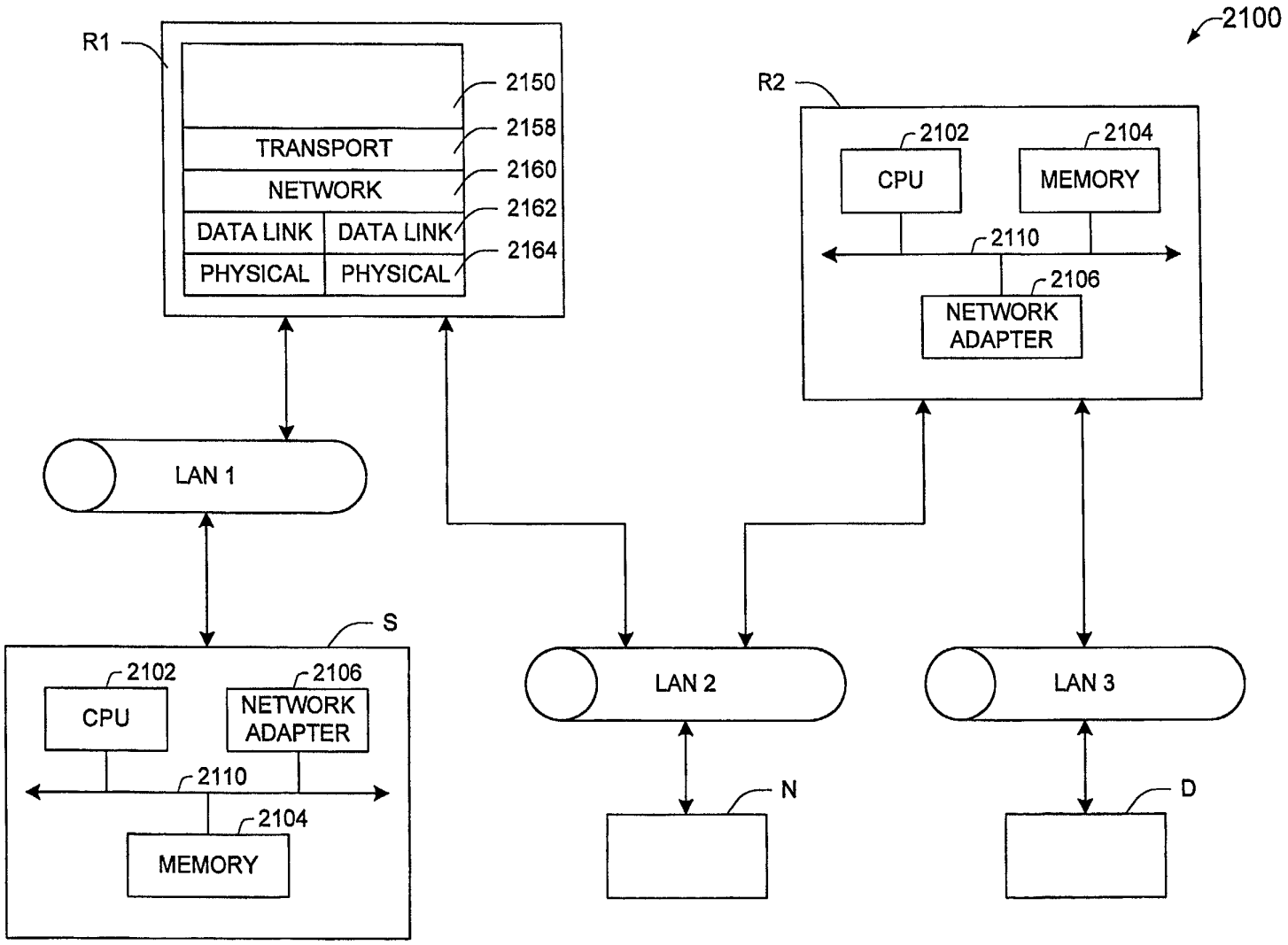

Fig. 21

09482154.011200

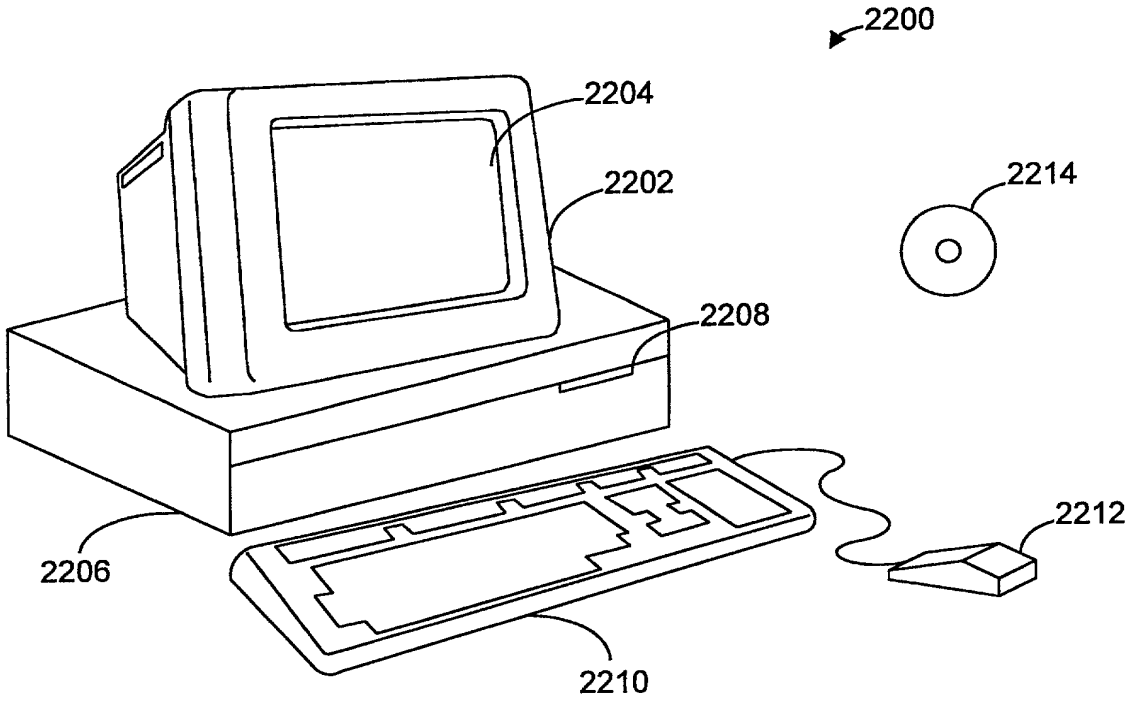
2200
2204
2202
2214
2208
2212
2206
2210

Fig. 22

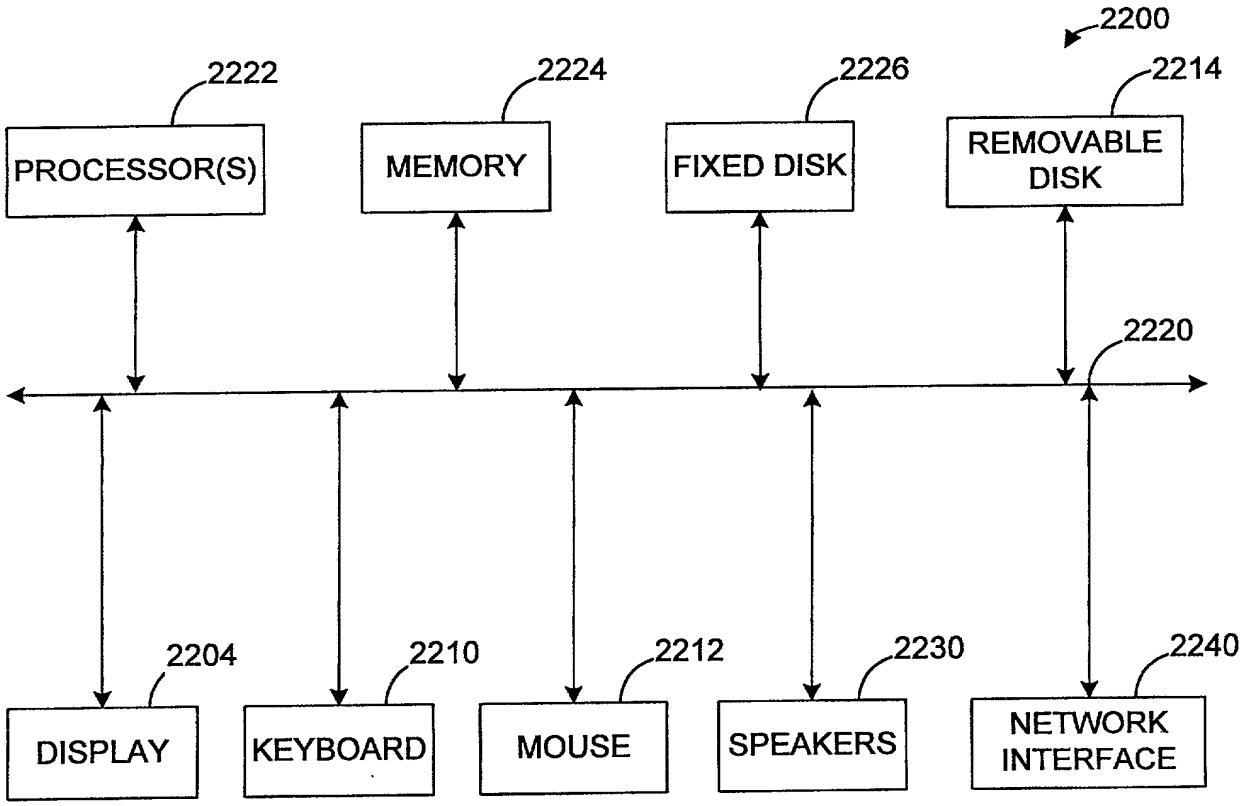
2200
2222
2224
2226
2214
PROCESSOR(S)
MEMORY
FIXED DISK
REMOVABLE DISK
2220
2204
2210
2212
2230
2240
DISPLAY
KEYBOARD
MOUSE
SPEAKERS
NETWORK INTERFACE

Fig. 23

DECLARATION AND POWER OF ATTORNEY FOR ORIGINAL U.S. PATENT APPLICATION

Attorney's Docket No. **LEANP001**

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **METHODS AND APPARATUS FOR CONNECTING SHIPPERS AND CARRIERS IN THE THIRD PARTY LOGISTICS ENVIRONMENT VIA THE INTERNET**, the specification of which,

(check one)

1. ☒ is attached hereto.

2. ☐ was filed on _____ as U.S. Application No. _____ and was amended on _____.

3. ☐ was filed on _____ as International PCT Application No. _____ and was amended on _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, CFR § 1.56.

Prior Foreign Application(s)

I hereby claim foreign priority benefits under Title 35, United States code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

(Application No.)	(Country)	(Filing Date)	Priority Benefits Claimed? Yes ___ No ___

Provisional Application(s)

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below:

(Application No.)	(Filing Date)
60/162,809	**November 1, 1999**

Prior U.S. Application(s)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application No.)	(Filing Date)	(Status - patented, pending, abandoned)

Power of Attorney
And I hereby appoint the law firm of **Beyer & Weaver, LLP** and all practitioners who are associated with the Customer Number 022434 as my principal attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Direct Correspondence To:

Customer Number: 022434
BEYER & WEAVER, LLP
P.O. Box 61059
Palo Alto, CA 94306

Direct Telephone Calls To: **Joe Villeneuve at telephone number (510) 843-6200**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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Inventor's signature: _____ **Date of Signature:** Jan 9, 2000

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Second Inventor: **JEFFREY W. POTTS** Citizenship: **UNITED STATES**

Inventor's signature: _____ **Date of Signature:** January 11, 2000

Residence: (City) **HOLLAND** (State/Country) **MICHIGAN/U.S.**

Post Office Address: **4670 BEECH STREET, HOLLAND, MICHIGAN 49423**

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Inventor's signature: _____ **Date of Signature:** Jan. 11, 2000

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Fourth Inventor: **ANDREW J. BASS** Citizenship: **UNITED STATES**

Inventor's signature: _____ **Date of Signature:** Jan. 11, 2000

Residence: (City) **HOLLAND** (State/Country) **MICHIGAN/U.S.**

Post Office Address: **652 CENTRAL AVENUE, HOLLAND, MICHIGAN 49423**